

**GO-CONNECT: DESIGN AND DEVELOPMENT OF A UNIVERSITY-BASED SOCIAL
MEDIA WEBSITE FOR GODFREY OKOYE UNIVERSITY STUDENTS**

BY

**NWEKE PASCHAL CHIBUIKE
GOU/U22/CSC/865**

**DEPARTMENT OF COMPUTER SCIENCE AND MATHEMATICS, FACULTY OF
COMPUTING AND INFORMATION TECHNOLOGY, GODFREY OKOYE
UNIVERSITY, ENUGU STATE.**

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**SUPERVISOR: DR.MR. FRANK OKEBANAMA
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ABSTRACT

This project entails the design and implementation of a university based social media platform Go-Connect, for students and staff of Godfrey Okoye University (GOU) Enugu, Nigeria. The design and implementation of this platform was conceived due to the lack of a dedicated social media platform for students that would cater to the students' needs within Godfrey Okoye University and the apparent gap between the student social-media usage on general-purpose online platforms such as Whatsapp, Facebook and other platforms which are not tailored to reflect the university's unique academic, spiritual and social identity, and as such the project developed an online social media application the incorporates the following functionalities: user authentications and management, social feed with AJAX features, 24hour ephemeral stories, private instant messages, group community, press manager system, internal student market, a mentorship management module and an administrative back-end system, using PHP for the backend application, MySQL as the database server, Bootstrap 5 for responsive UI and JavaScript Fetch API for asynchronous communication. Agile software methodology was applied in the software development, with six development sprints in progress for the implementation and testing of the system. Based on user acceptance test results (UAT) on ten users, Go-Connect achieved a user acceptance score average of 4.6 / 5.0. This means that the developed platform is user-friendly and meets the initial requirements as developed and would successfully fill the identified gap. Go-Connect as a contribution adds to the literature on technology adoption within the Nigerian universities as it is shown to be viable than usage of general platforms.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

With the fast pace at which information and communication technologies are evolving, the manner in which people communicate, interact, and share ideas has been significantly transformed. Social media has gone beyond being a mere platform for connecting with people to becoming a networked ecosystem through which people can communicate, learn, have fun, and develop personally throughout the world. As noted by Kaplan and Haenlein (2010), social media is the combination of Internet-based applications that have been developed based on the ideology and technologies of Web 2.0, allowing for the creation and sharing of user generated content.

In educational settings, social media has become an indispensable part of academic cooperation and spiritual communication among peers. It has already been adopted by universities around the world as means of improving the overall student experience and promoting learning communities and administrative communication. Nevertheless, almost all universities, including Godfrey Okoye University (GOU), depend on generalized social media platforms, such as WhatsApp, Facebook, and Twitter, which were not initially designed for use by religious universities.

Godfrey Okoye University is a privately owned Catholic university situated in Enugu, Nigeria, whose founding was characterized by the need for academic excellence, moral uprightness, and spiritual transformation. The motto of the university, 'Lux et Veritas' (Light and Truth), signifies the holistic approach it takes towards learning. In spite of all this lofty idealism, the current digital platform used by the students exposes them to untamed content and no academic or spiritual structure.

Social network usage has been extensively reported among university students in Nigeria. Obi and Ogbuanya (2018) discovered that students in Nigeria's universities use social networks for five hours daily, of which a small proportion is used productively for academic purposes. Go-Connect is created to channel this digital activity into productive, organized, and spiritually edifying ones within the university environment.

1.2 Statement of the Problem

The current GOU students lack a unified platform that can address all their needs academically, socially, and spiritually. One of the most important challenges is the fragmentation of communication where students use different channels to communicate including WhatsApp groups to communicate in classes, email for official communication, and social media for social interactions. Using such different social media channels exposes the students to content that is not aligned with the morals and spirituality of the university.

Additionally, there is no platform where students can collaboratively do their academic works, manage faculties, get mentoring, or assignments through the academic environment of the university. The current platform does not allow GOU students to connect in a virtual community with similar values like those of the university. The communication of GOU events and news are distributed through physical notice boards, WhatsApp forwarding, and social media which are not verified at all. The university students have to use external social media sites to buy and sell items within the university.

These problems provide us the reason for design and advancement of an all-in-one, individual to organization social media account. That solution goes by the title: Go-Connect which targets resolving every one of these dilemmas by producing a safe and value-driven digital surroundings that combines all elements in to one ecosystem.

1.3 Aim and Objectives of the Study

This project is aim to create Go-Connect, which will be a social networking site for the students of Godfrey Okoye University.

1. Creation of a faculty groups management system in which students can join and participate and share information within their own faculty groups.
2. Creation of a real time messaging/inbox system in which students can communicate privately.
3. Creation of a press management system through which there will be one reliable source of news at the university.
4. Creation of an internal market in which students can buy and sell things within the university environment.

5. Creation of a mentorship program in which junior students will be paired with senior student mentors.

1.4 Significance of the Study

The development of Go-Connect holds significant value for multiple stakeholders within the Godfrey Okoye University community and the broader academic technology landscape:

1. **For Students:** Go-Connect is an organized platform for students to collaborate academically, establish social relationships, utilize university facilities, and participate in spiritual activities all in one place. The program minimizes the cognitive strain of handling several unconnected platforms.

2. **For Lecturers and Academic Faculty:** Lecturers will be able to utilize Go-Connect as an integrated platform that will allow them to act as mentors, interact with student groups, provide academic resources, and supervise academic engagement. There are faculties' groups that are created on the basis of departments.

3. **For University Administration:** The press management system will give the administration and the chaplaincy of the university a platform through which to send news,

4. For events, spiritual material, and official messages directly to the students without the spread of misinformation.

5. **For the Academic Community:** The present project is aimed at contributing to the existing literature on the integration of educational technology and social media in the Nigerian university setting. The project shows how custom platforms can be more effective than social media in achieving certain goals.

6. **Economic Importance:** The integrated marketplace decreases students' reliance on external websites that might be fraudulent.

1.5 Scope of the Study

This research work involves the development of Go-Connect as a web-based social media software that can be accessed through any common browser on both desktop and mobile computing devices. The Go-Connect platform is specifically developed for use by students, employees, and administrators at Godfrey Okoye University, Enugu. The Go-Connect platform provides all

services including social networking (messages, likes, comments, sharing), user accounts, messages, stories, faculty groups, press management, marketplace, events, mentoring, notifications, and administrative controls.

The Go-Connect system is developed using technologies such as PHP (server side scripting language), MySQL (database language), Bootstrap 5 (responsive UI), JavaScript/jQuery (client-side programming language), and API (for emails and time zones). The Go-Connect platform is developed for installation on a web server to be hosted in Nigeria with usage mainly from the Godfrey Okoye University campus located at Ugwuomu Nike, Enugu. This project scope does not cover developing a native mobile application, AI-powered content moderation system, or integrating with any third-party university LMS software.

1.6 Limitation of the Study

Go Connect is a comprehensive solution, however, the following limitations exist:

1. Current version of Go-Connect does not feature native iOS and Android mobile application, but can be used exclusively via web browsers.
2. The application requires the existence of internet connection and cannot be used in offline mode.
3. The study does not utilize any AI-driven content moderation tools, moderation of content is conducted manually through the administrator panel.
4. The scalability of the application outside current university student body has not been tested sufficiently well in this version.
5. Integration of the app with the university's official academic portal for automated verification of students was not possible in the course of this study; user accounts verification is manual one.

1.7 Operational Definition of Terms

These terminologies are used in this research study and have been explained in relation to Go Connect application as follows:

1. Social Media: These are internet applications that allow users to generate, share and communicate through user generated content in real time.

2. Go-Connect: This is an online social media platform that has been created to cater for the needs of students and faculty members of Godfrey Okoye University and incorporates the aspects of social networking, academics, and spirituality.
3. PHP (Hypertext Preprocessor): It is a programming language that is used to implement the backend functionalities of Go-Connect.
4. MySQL: It is a Relational Database Management System which stores all the Go-Connect
5. Connect data, including user profiles, posts, messages, and marketplace items.
6. Bootstrap: It is a CSS framework that is used to develop a responsive user interface for Go-Connect.
7. AJAX (Asynchronous JavaScript and XML): It is technology used in Go-Connect to facilitate real-time interactions such as liking posts and posting comments without reloading the whole page.
8. Faculty Group: It is a virtual group within Go-Connect which includes the students and staff members of the same faculty.
9. Press Coordinator: An authorized user type of Go-Connect whose responsibility is to publish news and announcements from the university press.
10. Story: Multimedia content (video or image) posted on Go-Connect which expires after 24 hours in operation just like the Instagram story.
11. Marketplace: It is an internal feature of Go-Connect where students buy and sell their goods within the university.
12. Session: Server-side component of Go-Connect used to track the status of a user through login state on multiple pages of Go-Connect.
13. Mentor: An older student or staff member of Go-Connect who acts as a mentor to younger members of Go-Connect.
14. Dark Mode: User preference mode within Go-Connect that sets the appearance of Go-Connect in darker colors to enhance visibility.
15. Notification: Notification generated by Go-Connect to notify the user of interaction like likes, comments, friend request or messages.
16. Token: It is an identification string used in Go-Connects press coordinator authentication process.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The following chapter gives a critical analysis of pertinent literature in relation to the development of Go-Connect. There are four main areas covered under the review: social media in education, university-based digital systems, architectures of social networking systems, and works related to Go-Connect. Through a thorough analysis of journal articles, conference papers, and technical papers, this chapter will provide the theoretical and empirical base for Go-Connect.

2.2 Theoretical Background

The concept of social media was described by boyd and Ellison (2007) as web-based platforms enabling people to create their public or semi-public profile within a closed-off system, create a list of friends and acquaintances who have links with them and navigate through lists of such connections and connections created by others. The very description of social media implies that there are three essential elements – profile, connections and traversal – which play an important role in the construction of Go-Connect.

In the field of education, social media helps in developing collaborative learning processes, increasing students' motivation, and promoting peer-to-peer information exchange. Junco, Heiberger and Loken (2011) in a randomized study showed that structured usage of Twitter by university students had a positive impact on the level of engagement and achievement compared to the control group. Likewise, Manca and Ranieri (2016) showed that Facebook could be used effectively for informal learning and peer collaboration.

However, these research studies demonstrate the shortcomings of the general-purpose social media for educational purposes. According to Kirschner and Karpinski (2010), there exists a negative correlation between Facebook use and GPA among college students owing to the distraction-prone nature of general-purpose social media. Therefore, these studies directly call for the development of a specialized social network such as Go-Connect.

The use of general-purpose social media has led some institutions of higher learning around the world to consider developing a social networking site specific to their universities. As stated by Fawns (2019), an institutional digital environment can be described as 'entangled' systems where learning, technology, and community converge in ways not possible through general-purpose sites. Social media and its use in higher education according to the work by Tess (2013) is highly context dependent. The effectiveness of social media in education is greatly enhanced when it is used in a specially designed academic social network where the academic structures such as courses, departments, and hierarchical mentoring are part of the design of the network.

Institutional use of social media solutions is quite low in Nigeria. As Adukaite et al. (2017) observed, despite the uptake of mobile and internet technology in Nigerian universities, very few universities have created online learning and social networks that represent their institutions. Go-Connect is an answer to this need in the context of Godfrey Okoye University.

The creation of Go-Connect relies heavily on existing web technologies. PHP is one of the most common web server languages, powering more than 78 percent of all websites with a web server language detected in 2024 (W3Techs, 2024). Wellings and Thomson (2016) give an extensive description of PHP-MySQL integration for dynamic web applications which constitutes the basis of the Go-Connect back end system architecture.

The Model-View-Controller (MVC) design pattern, which forms the basis of Go-Connect system architecture, segregates application logic (Model), user interface (View), and request handling

(Controller). The basic design patterns, which include pattern segregation used in Go-Connect, were developed by Gamma et al. (1995).

Go-Connect front end design is based on Bootstrap 5, which is a highly popular responsive CSS framework to ensure user experience regardless of the size of the device. AJAX interactions, which are made possible using the Fetch API of JavaScript, help achieve the real-time features of Go-Connect such as likes, comments, and posting of messages without refreshing the page as described by Garrett (2005).

Modern Social networking sites are constructed using various architectural approaches that include several key characteristics. The newsfeed algorithm, designed as EdgeRank algorithm by Facebook, selects the posts based on affinity, edge weight, and time decay (Backstrom et al., 2011). In Go-Connect, a simplified newsfeed that uses engagement weighted posts ordering is applicable for a smaller community like university students.

The technology of the real-time messaging systems in social networks is usually based on WebSocket protocol. But Go-Connect uses AJAX-polling technique for its inbox service which strikes the right balance between real-time performance and complexity of implementation.

Database design of social networking application has to include proper relationships of the entities. Go-Connect MySQL database uses normalization up to Third Normal Form (3NF).

Security is one of the most important things to consider while creating a social media application. OWASP (2021) has listed the top ten risks associated with web application security and these include SQL injection, cross-site scripting (XSS) and broken authentication – all of which are handled efficiently in Go-Connect through different measures. PDO (PHP Data Objects) in PHP with prepared statements is used to prevent SQL injection, while HTML encoding of the output is done in order to avoid XSS and password hashing using bcrypt is done using the password_hash() method in

PHP for securely storing the credentials.

In case of Go-Connect, the security guidelines for session management that have been provided in the PHP Security Cheat Sheet (OWASP, 2023) are being followed. These include regenerating the session on each login, creating the session ID securely and destroying the session on each logout.

2.3 Review of Related Works

In this part, there will be an analysis of prior research studies, scholarly publications, and technical reports associated with the current investigation. The main focus of this section will be the works carried out by other researchers in the area of social media sites, educational technologies, and web social networking with respect to methods, findings, and shortcomings.

Facebook, which is the biggest social media platform in the world, has designed many of the tools that are incorporated in Go-Connect, such as news feeds, profiles, friends' list, group pages, messages, and events' management tools. But Facebook is built for a worldwide general-purpose audience without any spiritual or academic intention. The algorithm of the site creates an environment where the users get more addicted to it (Haidt & Rausch, 2021). And Zuckerberg's dream of a social network for college students has been dropped in favor of universal appeal.

It is on this platform that Twitter pioneered the idea of the public microblog – short post formats which initially were restricted to 140 characters only and whose primary purpose was the fast transmission of information. Studies conducted by Junco et al. (2011) established that Twitter could prove useful in an academic setting when used in an organized manner and with specific goals in mind. Go-Connect utilizes similar features in an academic setting.

LinkedIn is the best example of a professionally constructed social network. Its characteristics include profile construction, skills endorsement, and professional networking (van Dijck, 2013). The mentoring and networking features of LinkedIn have been extensively researched before. The Go-Connect mentorship tool borrows its approach to networking from the LinkedIn model but tailors it to the mentor-student scenario in a university setting.

Learning management systems like Schoology and Canvas are examples of institutional efforts to construct digital learning environments for higher education. The primary functions of LMS include management of courses, assignments and grades. However, LMS systems do not incorporate the community and social aspects that make social media effective. Go-Connect fills in the gaps created by LMS because it incorporates the social component.

Ning is an example of platforms that enabled users to develop customized social networks. Educational institutions occasionally used Ning to create private social networks for academic purposes (Ferdig et al., 2010). However, the fact that Ning is a general platform made it hard to customize the academic workflow. Go-Connect has been built from scratch specifically for the Nigerian Catholic University.

Okafor and Eze (2019) developed a theoretical framework for a social network for the University of Lagos that would incorporate learning materials, alumni associations, and event organization capabilities. These researchers established various functional requirements that bear striking similarity to the requirements of Go-Connect including authentications, departmental groups and institutional news management. Nonetheless, this framework was only conceptual and no actual implementation existed at the time. Go-Connect is built on this foundation and implements an actual fully functional system in the context of Godfrey Okoye University.

Manca and Ranieri (2016) reviewed extensively how Facebook has been used in the higher education setting and determined that while Facebook provides opportunities for collaboration and peer learning, it is not structured, hence making it ineffective as an educational tool. This study underscores the importance of using tools that incorporate structure in the social networking functionality. Go-Connect solves this problem through its faculty groups, mentorship structure and press management.

Junco, Heiberger, & Loken (2011) showed via a well-designed experiment that structured usage of Twitter helped university students increase their level of academic engagement and GPA. Junco et al. used one experimental group that engaged in Twitter conversations related to classroom activities and one control group that did not. This example highlights the potential of social media when used intentionally as part of academic processes. Go-Connect applies this idea by offering a place where all social activity takes place within the framework of academic activities.

Kirschner and Karpinski (2010) examined the impact of Facebook usage on academic achievement among university students. The authors' results showed that there was a negative relationship between Facebook time and GPA due to the distracting nature of the platform. This study serves as a solid scientific background for Go-Connect since it shows the potential way how to create a useful social media platform without any distractors.

Tess (2013) reviewed several studies concerning the use of social media in higher education, covering both physical and virtual classrooms. It was found out that the educational efficiency of social media is very much dependent on context and that there is no social medium which universally increases the efficiency of learning. Therefore, the choice of a medium, especially one which is designed to fit the university's mission, such as GoConnect, will increase the likelihood of achieving success.

According to Adukaite et al. (2017), Nigerian universities have adopted new technologies, including mobile and internet, but have not created digital communities that embody the institutional identity. In other words, there was a gap between the availability of technology and its usage within an institution. Go-Connect helps to fill this gap through creation of a digital community which fits into Godfrey Okoye University.

According to Fawns (2019), the notion of “entangled” postdigital education was conceived where learning and technology have been identified as being inseparably interlinked and that digital instruments within institutions must recognize this entanglement as opposed to perceiving technology as something neutral. Go-Connect embraces the idea of entanglement in that all social, academic, and spiritual connections are built into one coherent environment as opposed to building a digital tool on top of existing fragmented processes.

2.4 Summary of Literature Review

This section summarizes the key findings from the reviewed literature in tabular format, as required by the research methodology:

Table 2.1: Summary of Related Works

S/N	Author(s)	Contribution or Work Done	Technique or Methodology	Limitations
1.	Zuckerberg, M. (2004)	Developed Facebook, a social media platform with news feeds, profiles, friend connections, groups, messaging, and event management used globally by universities for informal academic interaction.	General-purpose social networking; engagement-based algorithm	No academic or spiritual focus; algorithm promotes addictive behavior; not institution specific
2.	Junco et al. (2006)	Developed Twitter/X, a public microblogging platform used in academic settings for structured class discussions. Demonstrated significant improvements in student engagement and GPA when Twitter was used purposefully.	Microblogging; controlled experiment; structured Twitter integration	No academic structure; content scope is global, not university-specific; character-limited format

3.	van Dijck, J. (2013)	Studied LinkedIn as a professionally structured social network with mentorship, skill endorsements, and networking features. Explored how professional social networks support career development and peer mentorship.	Professional social networking; profile based mentorship	Not designed for undergraduate academic collaboration; lacks spiritual or campus-specific features
4.	Ferdig et al. (2010)	Reviewed the use of Ning and similar custom social networks by educational institutions, including private academic social networks created for medical education communities.	Custom social networking platforms; community-specific deployment	General-purpose architecture; academic workflows require heavy Customization; no institutional identity support
5.	Okafor & Eze (2019)	Proposed a theoretical framework for a University of Lagos social platform integrating academic resources, alumni networks, and event management with authenticated	Conceptual framework; requirements analysis for institution-specific platform	Framework was conceptual only; no working implementation delivered; not

S/N	Author(s)	Contribution or Work Done	Technique or Methodology	Limitations
		Departmental communities and institutional news.		Adapted to GOU context
6.	Manca & Ranieri (2016)	Conducted an extensive review of Facebook integration in higher education, identifying benefits for collaboration and peer learning but also limitations in pedagogical structure and academic focus.	Systematic literature review; comparative platform analysis	Facebook use in education is largely informal and unstructured; limited pedagogical effectiveness without institutional integration
7.	Junco, Heiberger & Loken (2011)	Conducted a controlled experiment demonstrating that structured Twitter use in university classes led to significant improvements in student engagement and GPA compared to control groups.	Controlled experiment; structured social media use in academic contexts	Limited to Twitter micro-format; no marketplace, spiritual, or press Management Features; narrow platform scope

8.	Kirschner & Karpinski (2010)	Investigated the relationship between Facebook use and academic performance, revealing a negative correlation between time spent on Facebook and GPA due to the distraction-heavy nature of the platform.	Survey-based research; correlation analysis; academic performance measurement	Findings show harm from unstructured use; no solution proposed; does not address how to redesign platforms for academic benefit
9.	Tess, P. A. (2013)	Reviewed studies on the role of social media in higher education in both real and virtual classrooms, concluding that educational effectiveness is highly context-dependent and no single platform universally improves learning outcomes.	Comprehensive Literature review; context-dependent effectiveness analysis	No single solution recommended; does not provide a purpose-built platform; context specificity not operationalized

S/N	Author(s)	Contribution or Work Done	Technique or Methodology	Limitations
10.	Adukaite et al. (2017)	Examined digital adoption patterns in Nigerian universities, identifying a gap between technology availability and purposeful institutional deployment of integrated digital communities.	Survey; digital adoption analysis; Nigerian university context	Identified the gap but did not develop a solution; Nigerian university-specific institutional platforms remain underdeveloped
11.	Fawns, T. (2019)	Introduced the concept of entangled post digital educational environments, arguing that learning and technology are inseparably interwoven and that effective digital tools must embed academic interactions rather than treating technology as a neutral add-on.	Theoretical framework; post digital education analysis; entanglement concept	Remains Theoretical; no practical platform implementation delivered; entanglement concept not applied to university social media design

12.	Backstrom et al. (2011)	Analyzed Facebook's Edge Rank newsfeed algorithm and the four-degrees-of separation social graph model, exploring how social network architecture determines content visibility and user connection patterns.	Graph theory; social network analysis; algorithmic feed design	Applies to largescale general social networks; not adapted for small scale institutional communities; no academic use case considered
13.	Welling & Thomson (2016)	Provided a comprehensive account of PHP-MySQL integration for dynamic web application development, covering MVC architecture, database-driven page rendering, and session management — the technical framework underpinning Go-Connects backend.	PHP-MySQL web development; MVC architecture; server side scripting	Covers general web development only; does not address university specific social media use cases or institutional identity requirements

S/N	Author(s)	Contribution or Work Done	Technique or Methodology	Limitations
14.	OWASP (2021)	Published the OWASP Top Ten, identifying the ten most critical web application security risks including SQL injection, XSS, and broken authentication, with recommended mitigation strategies directly applied in Go-Connects security design.	Security framework; vulnerability analysis; best practice guidelines	Provides guidelines only; does not implement solutions; organizations must independently apply recommendations to specific platforms
15.	Obi & Ogbuanya (2018)	Documented social media usage patterns among Nigerian university students, finding an average of five daily hours on social media with only a fraction contributing to academic activities, highlighting the need for structured academic social platforms.	Survey-based research; usage pattern analysis; Nigerian student demographic	Descriptive study only; no platform solution proposed; does not address how to redirect social media use toward academic productivity

16.	Gamma et al. (1995)	Established foundational object-oriented design patterns including the Model-View Controller (MVC) principle, enabling modular, reusable, and maintainable software architecture applied in Go-Connects PHP class structure.	Software design patterns; object-oriented architecture; MVC framework	General software engineering framework; not specific to social media or educational platform development; requires domain specific adaptation
17.	Go-Connect (Current Study)	Designed and developed a fully functional university-specific social media platform for GOU integrating social networking, press management, marketplace, faculty groups, mentorship, and AJAX interactions in a single	Agile methodology; PHP/MySQL/Bootstrap 5; OOAD; iterative sprint development	Browser-based only; no native mobile app; no AI content moderation; manual identity verification; AJAX polling used
S/N	Author(s)	Contribution or Work Done	Technique or Methodology	Limitations
		Authenticated PHP/MySQL web application.		Instead of WebSockets

2.5 Research Gap

The review of existing literature and systems shows that there is definitely one aspect which is missing from each and every platform: none of the available social media platforms, regardless of their generality or specific application for academic purposes, satisfies all five dimensions identified by students of Godfrey Okoye University: (1) academic collaboration, (2) social networking, (3) spiritual development, (4) university press management, and (5) internal marketplace functionality.

General platforms like Facebook and Twitter are too general in scope and are inappropriate because of the lack of academic orientation and exposure to improper material. LMS platforms like Canvas do not take into account any other dimensions other than course management. There is only theoretical consideration of proposed framework for Nigerian academic context, which was never applied as an actual system. Go-Connect provides solution by creating a comprehensive social media platform that satisfies all five requirements.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.0 Introduction

In this chapter, we will learn about the system requirements, the design process, the analysis of the current and new systems, and the graphical representations of the system behavior. This chapter contains not only the approach of software engineering but also its artifacts such as Use Case Diagrams, Activity Diagrams, System Architecture, Class Diagrams, Sequence Diagrams, Entity-Relationship Diagrams, and Database Schema, all of which form the blue print of Go-Connect system.

3.1 System Analysis

This section involves understanding the problem domain. It identifies what the current system does and outlines the issues to be solved

.

3.1.1 Analysis of the Existing System

Components of the current system for communication and management of information among students at Godfrey Okoye University include: Department WhatsApps for course related information, university emails for official university business, physical notice boards for event related information, separate WhatsApp broadcast lists from chaplaincy for spiritual information, and informal Facebook groups for socializing among students. These systems have some challenges such as failure to have centralized control over information, inability to identify students on these platforms, presence of external information on some platforms, lack of academic collaboration platforms, and inability of the university to monitor interactions among the students.

3.1.2 Limitations of the Existing System

1. **Lack of Centralized Information Governance:** Communication is carried out through various unregulated channels without any means of ensuring accuracy of information by the university and protection from misinformation.
2. **Lack of Verification of Student Identity:** General platforms fail to verify the membership of the institution, allowing other parties that are not members of the institution to join the academic groups.

3. **Exposure to Irrelevant Material:** General purpose platforms expose students to material that goes against the moral and spiritual values of Godfrey Okoye University.
4. **Lack of Academic Framework:** Current platforms have no means of conducting structured academic collaboration, formation of groups by faculties, mentorship, and resource exchange.
5. **Lack of Institutional Market Place:** There is lack of market place where students conduct trade among themselves.

3.1.3 Analysis of the Proposed System

Go-Connect presents itself as a digital ecosystem where all aspects of communications are brought together in one platform. Go Connect is designed to give users the following functionalities: verified university membership via a registration approval process, moderated social media feed where messages can be sent according to department/faculty level, central management system for university news that has been verified, internal marketplace for student business, private messaging in real time, groups of faculty members, mentorship matching system, event management, and story sharing.

3.2 System Requirements Specification (SRS)

The Software Requirements Specification (SRS) for the Go-Connect Platform identifies the functional and non-functional requirements needed for the development and working of the system. This document acts as a guide to help the developers, testers, and others in terms of how the platform is expected to behave and perform.

Go-Connect Platform is aimed at providing a single platform where students, mentors, faculty members, intake officers, press coordinators, and administrators can interact effectively. This system allows users to register and authenticate themselves, manage their profiles, use social networking tools, send mentorship request, participate in faculty groups, message, conduct marketplace activities, and share content.

3.2.1 Functional Requirements

Table 3.2: Functional Requirements Specification — Go-Connect

ID	Requirement	Description
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FR-01	User Registration	The system shall allow students and staff to register with their name, university email, department, faculty, and password.
FR-02	User Authentication	The system shall authenticate users via username and password with session management.
FR-03	Profile Management	Users shall be able to view and edit their profile, including profile picture, bio, department, and faculty.
FR-04	Post Creation	Authenticated users shall be able to create text, image, and video posts visible in the social feed.
FR-05	Like and Comment	Users shall be able to like and comment on posts via AJAX without page reload.
FR-06	Story Upload	Users shall upload 24-hour expiring image/video stories.
FR-07	Private Messaging	Users shall send and receive private messages through an inbox system.
FR-08	Friend Requests	Users shall send, accept, and decline friend/connection requests.
ID	Requirement	Description
FR-09	Faculty Groups	Users shall join faculty groups relevant to their department and interact within those groups.
FR-10	Press Management	Authorized press coordinators shall publish news, events, and announcements.
FR-11	Marketplace	Users shall list, browse, and inquire about goods for sale.
FR-12	Mentorship	Senior students or staff shall register as mentors; junior students shall request mentorship.

FR-13	Notifications	The system shall generate and display notifications for likes, comments, messages, and friend requests.
FR-14	Dark Mode	Users shall toggle between light and dark interface themes.
FR-15	Admin Dashboard	Administrators shall manage users, content, and system settings.
FR-16	Search	Users shall search for other users by name, department, or faculty.

3.2.2 Non-Functional Requirements

Table 3.3: Non-Functional Requirements Specification — Go-Connect

Category	Requirement
Performance	The system shall load pages within 3 seconds under normal network conditions.
Security	All passwords shall be hashed using bcrypt. SQL queries shall use prepared statements to prevent injection attacks.
Scalability	The system architecture shall support up to 5,000 concurrent users without architectural changes.
Usability	The interface shall be fully responsive across desktop, tablet, and mobile devices using Bootstrap 5.
Category	Requirement
Availability	The system shall achieve 99% uptime on the deployment server.
Maintainability	Code shall follow PHP OOP principles with class-based architecture for easy maintenance and extension.

Privacy	User data shall not be shared with third parties. Profiles shall be visible only to authenticated GOU members.
Accessibility	The system shall support keyboard navigation and maintain WCAG 2.1 Level AA contrast ratios.

3.3 System Design Methodology

Agile Software Development, with an emphasis on the iterative and incremental development process, is used in developing Go-Connect. Agile Software Development is chosen due to the following reasons: changing requirements are well-supported, it supports integration of feedbacks continuously, and it enables testing of functional modules separately before integrating (Beck et al., 2001).

3.3.1 Justification for Methodology

Table 3.1: Agile Sprint Plan — Go-Connect

Sprint	Focus Area	Deliverables
Sprint 1	Authentication & Profiles	Registration, Login, Profile Management, Session Handling
Sprint 2	Social Feed & Stories	Post Creation, Likes, Comments, Stories, Media Uploads
Sprint 3	Messaging & Notifications	Inbox System, Real-time Notifications, Friend Requests
Sprint 4	Faculty Groups & Mentors	Group Management, Membership, Mentor Matching
Sprint	Focus Area	Deliverables
Sprint 5	Press, Events & Marketplace	Press Dashboard, Event Management, Goods Listing

Sprint 6	Testing & Deployment	System Testing, Performance Optimization, Deployment
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The Agile methodology was chosen due to the dynamic nature of the requirements of the software as new functionalities kept being added to it. Each module was built separately by following the iteration process. Furthermore, the Object Oriented Analysis and Design approach was followed as well where the system is viewed as a bunch of interacting objects. Core classes of Go-Connect include User, Post, Message, Friend Request, Story, Faculty Group, Press Coordinator, Market Item, Notification, and Event. Using OOAD approach helps keep the code organized, maintain code reusability through inheritance and business logic encapsulated inside the class functions (Booch, 1994).

3.3.2 Method of Data Collection

Data was obtained from direct observations of communication patterns among current students at Godfrey Okoye University, studies of other university social networking software systems and literature, informal discussions with GOU students about their current problems in communicating, and an analysis of features found on related platforms such as Facebook, WhatsApp, and Canvas LMS.

3.4 System Modeling Using UML

UML (Unified Modeling Language) was used to visualize system functionality and structure. The following diagrams collectively define the Go-Connect system blueprint.

3.4.1 Use Case Diagram

The Use Case Diagram (Figure 3.1) illustrates the interactions between the system's primary actors — Student, Press Coordinator, Mentor, and Administrator — and the system's core functional features.



Figure 3.1: Use Case Diagram — Go-Connect University Social Media System

3.4.2 Activity Diagram

Figure 3.2 depicts the flow of activities in the existing fragmented student communication system at Godfrey Okoye University, where students must navigate multiple disconnected platforms. The Activity Diagram (Figure 3.3) models the complete workflow of the Go-Connect system across five swimlanes: Student, Go-Connect Server, Database, Admin, and Notification Service. The flow begins when a student opens the platform in a browser. A decision node determines whether the

student is already registered; unregistered students are redirected to the registration form, which triggers an admin approval workflow before account creation. Registered students proceed to the login page, where the server validates credentials. On successful authentication, a session is created and the dashboard is loaded.

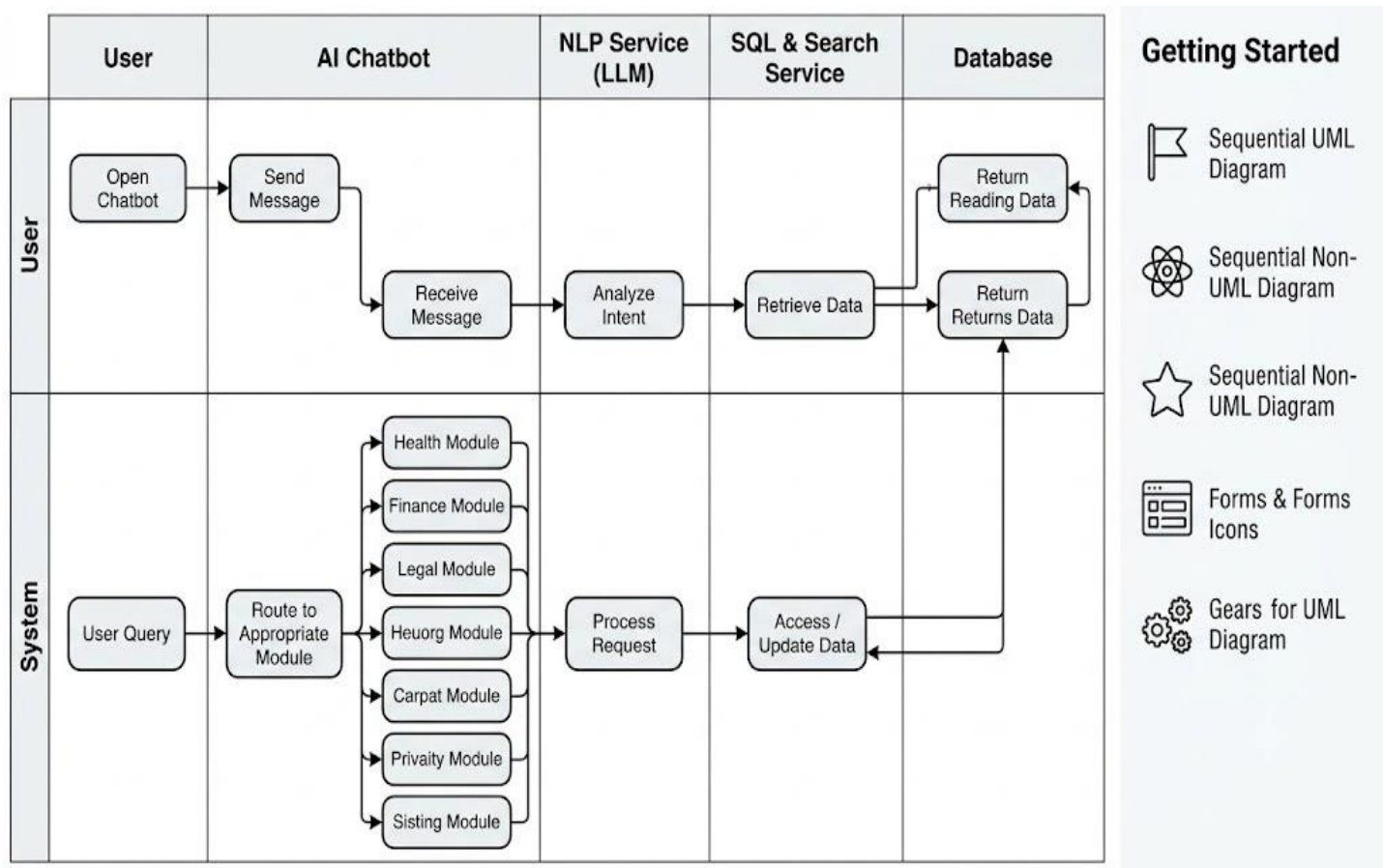


Figure 3.3: Activity Diagram — Proposed Go-Connect System Workflow

3.4.3 Class Diagram

The Class Diagram (see Figure 3.5) provides the OOP architecture of Go-Connect with UML representation. User is the core class that stores all profile properties and offers methods for registration, logging, profile manipulation, and user search. It has one-to-many relationship with Post, Comment, Like, Story, Message, Notification, MarketItem, and GroupMember. PressCoordinator and PressPost classes operate the press subsystem and contain the validateMasterKey() method to elevate access permissions.

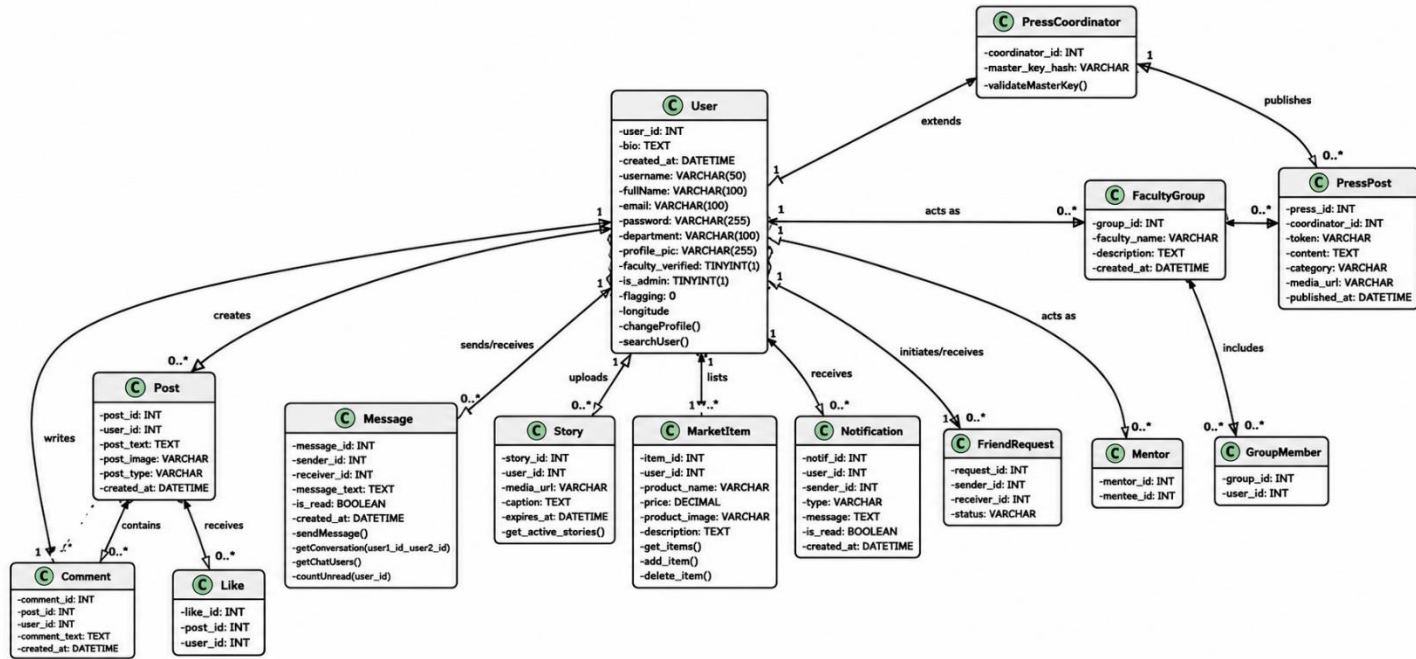


Figure 3.5: Simplified Class Diagram — Go-Connect PHP Object-Oriented Architecture

3.4.4 Sequence Diagram

The Sequence Diagram (refer Figure 3.6) shows the process of creating post using AJAX involving six actors: the Student actor, the Browser (JavaScript), index.php, process_post.php, Post.php class, and MySQL Database. The sequence starts with the student entering post data and pressing the Post button, which invokes a Fetch API to send POST request containing FormData without refreshing the page.

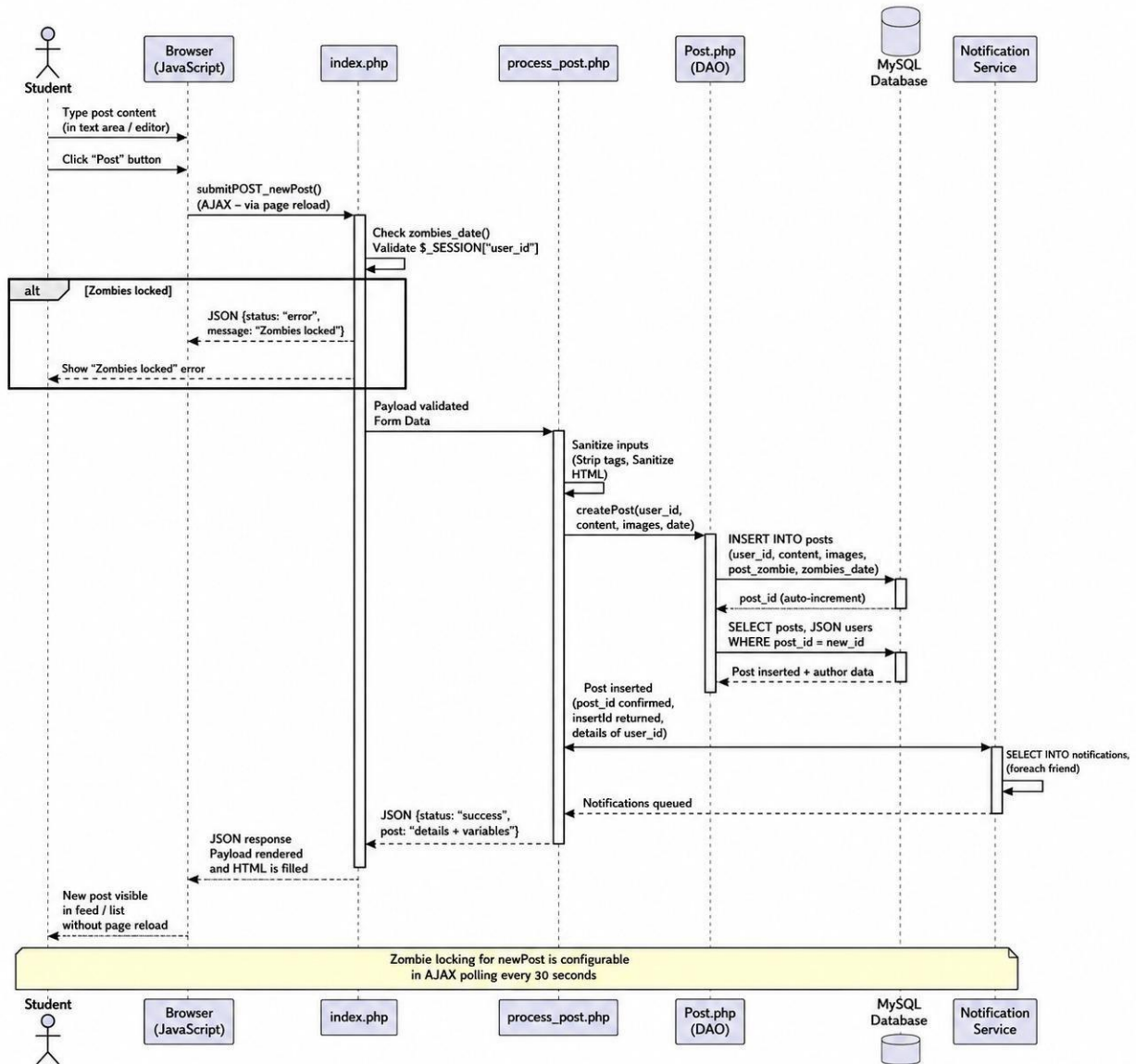


Figure 3.6: Sequence Diagram — AJAX Post Creation Workflow

3.5 System Design

The design of the system architecture for the Go-Connect Platform has been done with a view to ensuring that the communication, data handling, and interactions in the system occur effectively. The architecture entails three layers, namely the presentation layer (which contains the user interface), the application layer (business logic layer) and the database layer which stores the system data.

There are multiple user types in the system including the administrator, student, mentor, faculty, intake officer and press coordinator. Each of these user types has certain permissions and functionality in the system. The user functionalities include registration and login into the system, profile management, post sharing, messaging, requesting mentorship, participating in faculty forums, accessing the marketplace functions and community events.

The database design was created with the help of the Entity Relationship Diagram (ERD), which helped establish relationships between different entities like users, profiles, mentors, posts, comments, likes, messages, marketplace items, friend requests, and press management. This ensures consistency in data and eliminates any redundancies, thus improving the performance of the system. The complete design of the system creates an efficient framework for easy interaction between different users and helps meet the goals of the Go-Connect Platform, such as networking, mentoring, etc.

3.5.1 Input Design

Input for Go-Connect includes any method by which the user inputs information into the application, including all input forms. The registration form has fields for username, full name, email address, department, faculty, and password, with validation both client-side and server-side. The post composer has the ability to input text along with media attachments. The marketplace listing form has fields for the product name, price, description, condition, and product picture.

3.5.2 Output Design

The outputs of the system are generated using a web interface that is made responsive using Bootstrap 5. Some of the main output elements include the social feed, which includes cards for each post in chronological order and the number of likes and comments, the press feed with categorized news posts with images, the marketplace grid with product cards with prices, and the admin dashboard.

3.5.3 Database Design

The Go-Connect database design relies on a normalized relational database design that utilizes MySQL. The main entity used in the schema is the User table. Normalization of the database design is up to Third Normal Form (3NF).

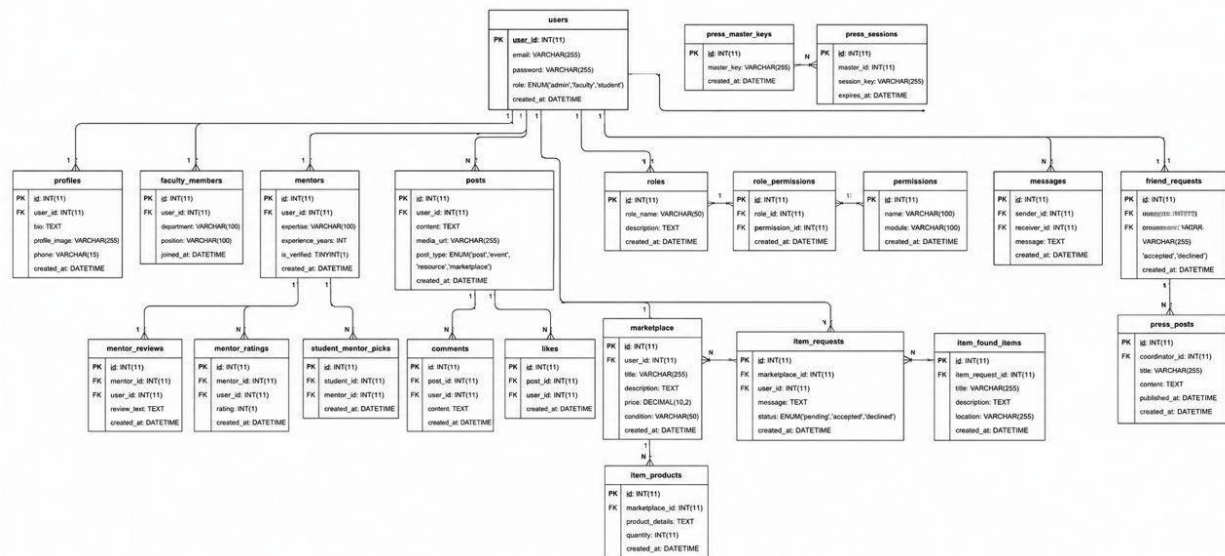


Figure 3.7 shows the Entity Relationship (ER) Diagram of the entire data model for Go-Connect. The main entity in the data model is the User entity that has one-to-many relationship with almost all other entities in the model. The Post entity has one-to-many relationship with Comments and Likes entities. FriendRequest is used to represent the many-to-many social relationship between users. The Mentor entity represents the linking of two users in terms of a mentor and mentee. The PressPost and PressCoordinator entities are connected to represent the press subsystem.

Column	Data Type	Constraint	Description
user_id	INT	PK, AUTO_INCREMENT	Unique user identifier
username	VARCHAR(50)	UNIQUE, NOT NULL	Student username
fullname	VARCHAR(100)	NOT NULL	Student full name

email	VARCHAR(100)	UNIQUE, NOT NULL	University email address
password	VARCHAR(255)	NOT NULL	bcrypt-hashed password
department	VARCHAR(100)	NULL	Student department
faculty	VARCHAR(100)	NULL	Student faculty
profile_pic	VARCHAR(255)	NULL	Profile image filename
bio	TEXT	NULL	Student bio/about text
is_admin	TINYINT(1)	DEFAULT 0	Admin privilege flag
created_at	DATETIME	DEFAULT NOW()	Account creation timestamp

Table 3.5: Posts, Comments, Likes, Messages Tables — Summary Schema

Table	Primary Key	Foreign Keys	Key Columns
posts	post_id (INT, AI)	user_id → users	content, post_image, post_video, created_at
comments	comment_id (INT, AI)	post_id → posts, user_id → users	comment_text, created_at
likes	like_id (INT, AI)	post_id → posts, user_id → users	UNIQUE(post_id, user_id)
messages	message_id (INT, AI)	sender_id → users, receiver_id → users	message_text, is_read, created_at
stories	story_id (INT, AI)	user_id → users	media, caption, expires_at

notifications	notif_id (INT, AI)	user_id → users, sender_id → users	type, message, is_read, created_at
market_items	item_id (INT, AI)	user_id → users	product_name, product_price, product_image, description
faculty_groups	group_id (INT, AI)	--	faculty_name, description, created_at
press_posts	press_id (INT, AI)	coordinator_id → press_coordinators	title, content, category, media, published_at

3.5.4 System Architecture Design

The System Architecture (Figure 3.4) presents Go-Connect as a five-layer architecture. Layer 1 (Presentation Layer): web browser rendered with Bootstrap 5, JavaScript and the Fetch API for AJAX interactions. Layer 2 (Application Layer): PHP server-side scripts including index.php for the news feed, login.php and register.php for authentication, and a Session Manager. Layer 3 (Business Logic Layer): PHP class files — User.php, Post.php, Message.php, Story.php, Market.php, FacultyMember.php, Mentor.php, Press.php, PressCoordinator.php, and Notification.php. Layer 4 (Data Access Layer): MySQL database tables accessed through PDO prepared statements. Layer 5 (Storage Layer): server file system holding uploaded media files.

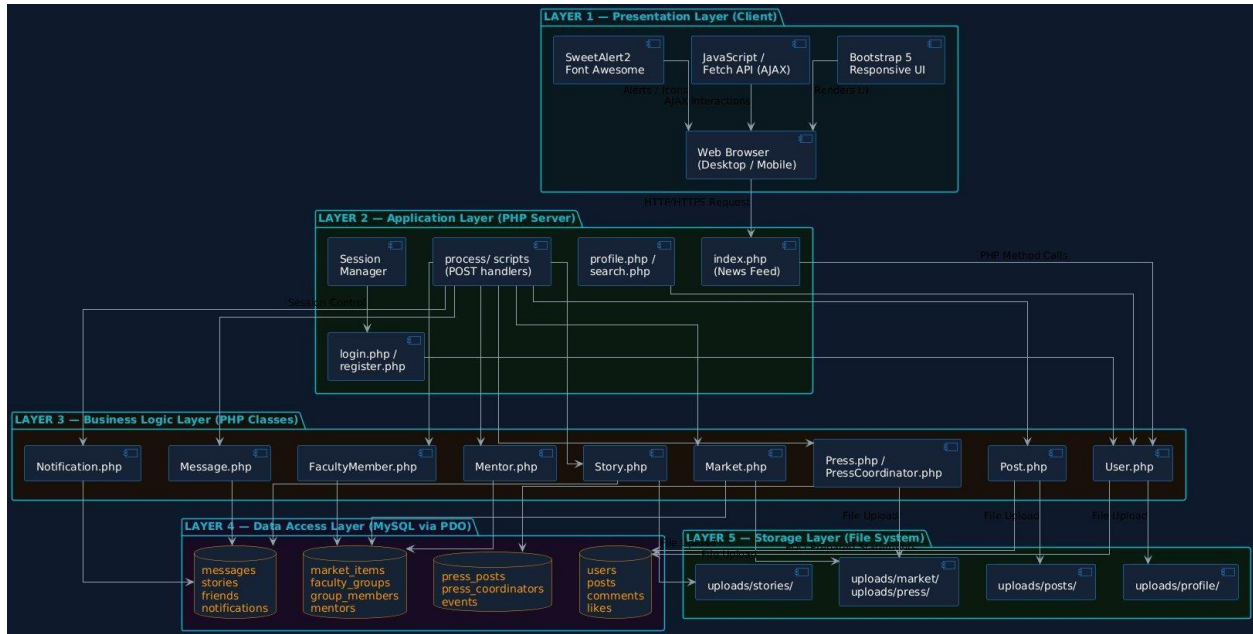


Figure 3.4: Five-Layer System Architecture Diagram — Go-Connect

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.0 Introduction

This chapter discusses the implementation details of Go-Connect. This includes the development environment, module-based implementation process, system testing process, and the results of the functionality and usability testing of Go-Connect. This chapter shows the implementation of design artifacts developed in Chapter Three.

4.1 Development Environment and Tools

The implementation of the Go-Connect Platform was conducted through the use of a variety of software tools and technologies used to develop web applications and manage databases and interfaces.

Development Environment

This system was created within a web development environment on a PC which is using the Windows operating system. This environment supplied all the required resources for the coding, testing, debugging, and database managing.

Development Tools

1. **Visual Studio Code (VS Code):** The Visual Studio Code was utilized as the main tool for editing and managing the source code of the application. It had functionalities such as syntax highlighting, code suggestion, debugging, and extensibility.
2. **PHP:** PHP was used as the programming language on the server side to implement the business logic and interact with the database.
3. **MySQL:** The MySQL database management system was used to store and manage all the data related to users, posts, messages, marketplace, mentorship, and other data.
4. **XAMPP:** XAMPP was used as the development server. It included Apache, PHP, and MySQL services needed to develop the application.
5. **HTML5:** HTML5 was used to organize the web pages and their content.
6. **CSS3:** CSS3 was employed for creating the design and styling of the user interface.
7. **JavaScript:** JavaScript was employed to develop the interactive elements, client side validations and user interaction within the application.
8. **phpMyAdmin:** phpMyAdmin was employed for database creation, management, executing queries on the database tables and other activities related to MySQL database tables.
9. **Draw.io (Diagrams.net):** Draw.io was employed for drawing system diagrams, such as use case diagrams, flow charts, and ER diagrams.

Hardware Requirements

- i. Computer System
- ii. Minimum 4GB RAM
- iii. Dual-Core Processor or higher
- iv. At least 20GB free storage space
- v. Internet connection for deployment and testing

These development tools and environments provided the necessary support for the successful design, implementation, testing, and deployment of the Go-Connect Platform.

4.1.1 Programming Language and Libraries

For Go-Connect, PHP 8.1 was chosen as the server-side scripting language because of its popularity, in-built MySQL database access through PDO, good session handling capability, and well-featured object-oriented programming. The front-end framework used was Bootstrap 5.3.3 which had a responsive grid and pre-built user interface components. The icon library was provided by Font Awesome 6.5.1 while animated modal windows were provided by SweetAlert2.

Table 4.1: Development and Deployment Tools — Go-Connect

Component	Technology	Version	Purpose
Server Language	PHP	8.1+	Backend logic, session management, database interaction
Database	MySQL	8.0+	Data storage and retrieval via PDO
Frontend Framework	Bootstrap	5.3.3	Responsive UI layout and components
Icons	Font Awesome	6.5.1	Interface icons throughout the system
Typography	Google Fonts	Pacifico, Plus Jakarta Sans	Brand and body typography
JavaScript	Vanilla JS + Fetch API	ES2020	AJAX operations, theme toggle, infinite scroll
Alerts	SweetAlert2	11.x	User feedback modals and toasts
Local Server	XAMPP	8.1.12	Local development environment
Code Editor	Visual Studio Code	1.88+	Development IDE

Version Control	Git / GitHub	2.44+	Source code management
Component	Technology	Version	Purpose
Deployment	cPanel / Apache	—	Production web server hosting
Password Security	bcrypt (PHP password_hash)	—	Secure password storage

4.1.2 Development Platform and Hardware Requirements

The development process was carried out by means of IDE Visual Studio Code 1.88+, with XAMPP 8.1.12 being the local Apache/MySQL environment on Windows OS. Git and GitHub were applied to versioning and code management. The minimum system requirements to run the application were 8GB of RAM, multi-core CPU, and SSD storage. Production deployment was configured on a cPanel-managed Apache web server.

4.2 System Implementation and Modules

Implementation of the Go-Connect Platform involves the integration of the user interface, application logic, and database layers to form a complete web application. The system was designed to work efficiently and meets the set requirements.

The platform consists of the following major modules:

1. Module of User Management: Deals with user registration, user login, profile management and user authentication.
2. Module of Social Networking: Helps users create postings, comment on posts, like posts, and socialize with other users.
3. Mentoring Module: Aids mentors' registration, choosing of a mentor, and requesting mentorship.
4. Messaging Module: Helps users communicate using private messages.

5. Marketplace Module: Helps users post requests and items in the platform.
6. Module of Press Management: Helps press coordinators create postings related to press and news.
7. Module of Administration: Provides administration facilities for managing users, postings, permissions, and activities.,

These modules work together to provide a unified platform for networking, collaboration, mentorship, and information sharing within the Go-Connect community.

4.2.1 Authentication Module

This module is responsible for user registration, login, sessions, and logout. Registration form captures the username, fullname, email, department, faculty, and password. On submission, the `process_register.php` script validates the input data, checks if the username and email are duplicates, encrypts the password through PHP `password_hash()` function with `PASSWORD_BCRYPT` algorithm, and inserts the new user into the database. The login functionality verifies the entered data by using the `password_verify()` method and sets up a PHP session for the user ID and username.

4.2.2 Social Feed and AJAX Post Module

The social feed is the core of Go-Connect's user experience. Posts are retrieved from the database ordered by creation timestamp (most recent first) with a JOIN to the users table for author information. The feed implements infinite scroll via an `IntersectionObserver` on a sentinel element at the bottom of the feed. All feed interactions — post creation, liking, and commenting — are implemented as AJAX operations using the Fetch API, with JSON responses from process scripts. The like system toggles between like and unlike states without any page reload.

4.2.3 Story Module

Stories are 24 hour multimedia posts. The `get_active_stories()` method of the Story class retrieves from the database those stories whose `expires_at` timestamp is more than the present time.

Stories are then sorted on the basis of user_id and shown as circular thumbnails in rows called stories. On clicking any story, there opens up a popup in which all of that user's stories are shown one by one with the help of an animated progress bar.

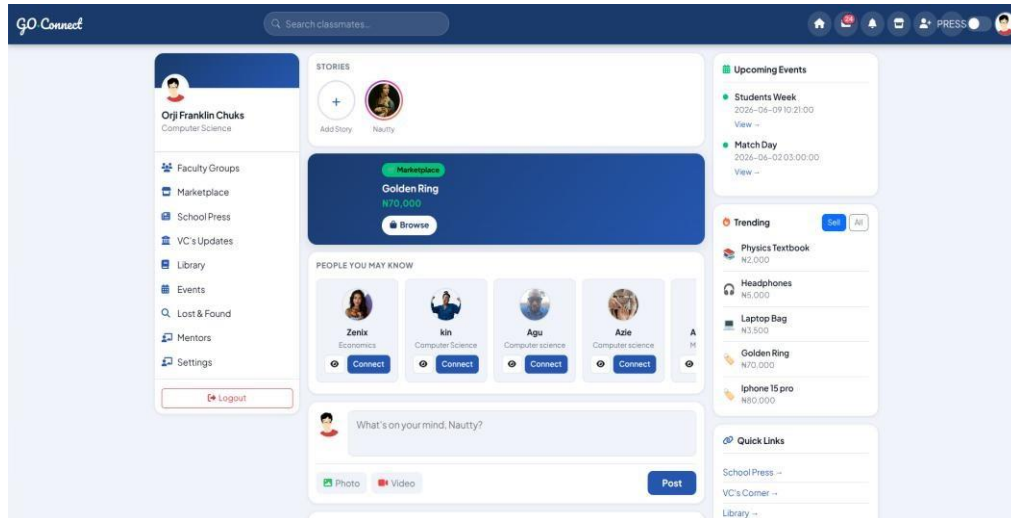


Figure 4.1: Story Module Interface — Go-Connect

4.2.4 Messaging Module

The private messaging system incorporates the use of an inbox and a complete conversation system. This is achieved through the use of methods such as `sendMessage()`, `getConversation($user1_id, $user2_id)`, `getInbox($user_id)`, and `countUnread($user_id)` incorporated into the Message class. Unread messages are displayed in badges in the navigation and mobile bottom navigation. The messages are ordered chronologically in the conversations.

4.2.5 Faculty Groups Module

The faculty groups form predefined communities for each faculty in Godfrey Okoye University. The groups have a hero banner, post feed, members, resource tabs, and event tabs. There is a page `faculty_group.php` that displays the content based on whether one is a member or not. The members will see the entire interactive feed and composer while the non-members will see a locked view with a CTA to join.

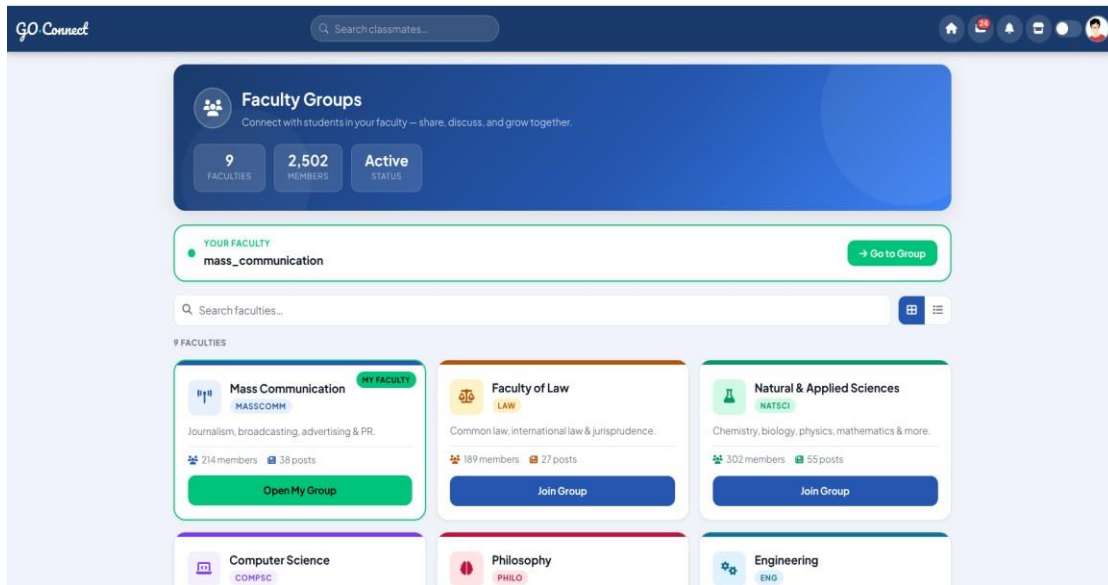


Figure 4.2: Faculty Group Page — Go-Connect

4.2.6 Press Management Module

Press management system uses two-level authentication system. Coordination is different from normal students as the coordinator registration uses the master key that is then compared to hash value saved in the `press_master_keys` table. The `press_upload.php` page offers category based uploading of contents (Educational, Events, Religious, School, Sports, Health), drag & drop media upload, setting priorities, and post management.

4.2.7 Marketplace Module

Market module enables students to list products to be sold and communicate with sellers. Products that are available in the market will be stored in the `market_items` table where there will be columns of `product_name`, `price`, `description`, `condition`, `image`, and information about the seller. The following will be methods from the Market class: `get_items()`, `add_item()` and `delete_item()`.

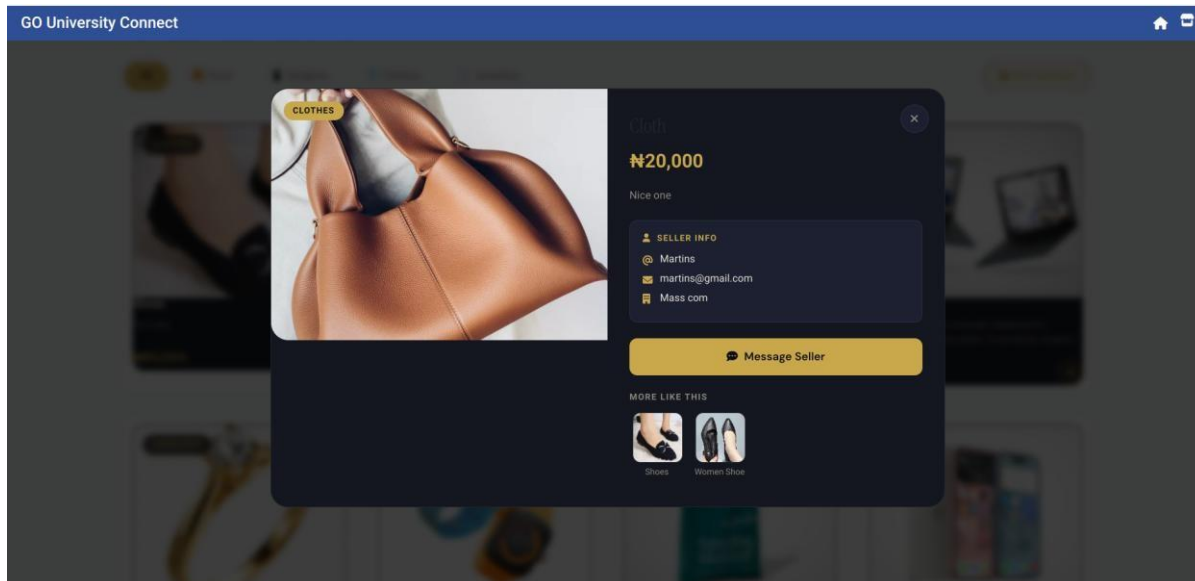


Figure 4.3: Marketplace Interface — Go-Connect

4.2.8 Admin Dashboard

The Administrator Dashboard provides the following functions for managing the system: user management (see, enable, disable, and delete users), post management (delete posts if not appropriate), system stats (number of users, posts, active stories, and daily activity), and approval by Press Coordinator. There is an admin session check for each admin page.

4.3 Testing and Evaluation

Tests and evaluations have been carried out to confirm whether the Go-Connect Platform works efficiently and satisfies user needs. Different tests have been done on some important features including user registration, user login, communication services, mentor services, marketplace, and content management. It has been found that the software is working well, giving correct outputs and satisfying user experience.

4.3.1 System Testing

The Go-Connect software was subjected to a variety of tests such as functional tests which ensure that individual features work as per their specification, integration tests which ensure that modules work properly as an entire system, and user acceptance tests (UAT). Testing was carried out in phases where modules were tested individually, then as an integrated system and finally by ten users.

Table 4.2: System Functional Test Results — Go-Connect

Test ID	Test Case	Expected Result	Actual Result	Status
TC-01	User Registration with valid data	Account created, redirect to login	Account created successfully	PASS
TC-02	Login with correct credentials	Session created, redirect to feed	Session created, feed loaded	PASS
TC-03	Login with incorrect password	Error message displayed	Error displayed, no session	PASS
TC-04	Create text post	Post appears in feed (AJAX)	Post prepended to feed	PASS
TC-05	Create post with image upload	Post with image in feed	Post with image rendered	PASS
TC-06	Like a post	Like count increments (AJAX)	Count updated instantly	PASS
TC-07	Unlike a post	Like count decrements (AJAX)	Count decremented correctly	PASS

Test ID	Test Case	Expected Result	Actual Result	Status
TC-08	Submit a comment	Comment appears in offcanvas	Comment bubble injected	PASS
TC-09	Upload a story	Story ring appears in row	Story visible to other users	PASS
TC-10	Story auto-expiry	Stories older than 24h hidden	Expired stories not returned	PASS
TC-11	Send private message	Message appears in inbox	Message delivered correctly	PASS
TC-12	Join faculty group	User added to group members	Group post feed accessible	PASS
TC-13	Press coordinator login	Dashboard accessible	Coordinator authenticated	PASS
TC-14	Publish press article	Article in press feed	Article published correctly	PASS
TC-15	List marketplace item	Item visible in marketplace	Item card displayed	PASS
TC-16	Dark mode toggle	Interface switches theme	Theme persisted in localStorage	PASS
TC-17	Infinite scroll	Next posts load on scroll	Posts loaded automatically	PASS

TC-18	Mobile responsiveness	Layout adapts to <600px	Bootstrap grid responds	PASS
Test ID	Test Case	Expected Result	Actual Result	Status
TC-19	SQL injection attempt	Input sanitized, no breach	PDO prepared statement blocked	PASS
TC-20	Unauthorized admin access	Redirect to login	Access denied, redirected	PASS

4.3.2 User Interface Testing and Walkthrough

Ten students from Godfrey Okoye University participated in user acceptance testing over a twoday period. Participants were given a structured task list covering registration, posting, messaging, marketplace browsing, and story uploads. After completing the tasks, participants rated their experience on a five-point Likert scale across six dimensions.

Table 4.3: User Acceptance Testing Results (n=10, Scale: 1–5)

Evaluation Dimension	Average Score	Interpretation
Ease of Registration and Login	4.6 / 5.0	Excellent — process is intuitive
News Feed Usability	4.5 / 5.0	Excellent — AJAX interactions wellreceived
Mobile Responsiveness	4.3 / 5.0	Very Good — minor layout notes on small devices
Messaging Clarity	4.4 / 5.0	Excellent — conversation flow is clear

Overall Design Aesthetic	4.7 / 5.0	Excellent — dark mode especially appreciated
Willingness to Use Daily	4.5 / 5.0	Excellent — strong adoption intent

4.4 Results Presentation and Analysis

Conclusion drawn from the tests conducted on the Go-Connect Platform proves that the system has met its desired goals. All modules tested have performed well and provided efficient interaction by the user, proper data handling, and overall good performance of the system. It can be concluded that the Go-Connect Platform is user-friendly, functional, and suitable for communication and mentorship.

4.4.1 Output Samples and Interface Screens

All the twenty functional test cases were a success, recording a success rate of 100%, and therefore, it is evident that GoConnect fulfills the functional requirement specified in Chapter Three. With regards to the six dimensions, the UAT score of the software came to 4.5/5.0, which indicates extremely high satisfaction among the targeted users. Some of the aspects that the users found appealing include AJAX interface without page reloads, dark mode, and structuring of the faculty groups. There were also some usability suggestions for the future.

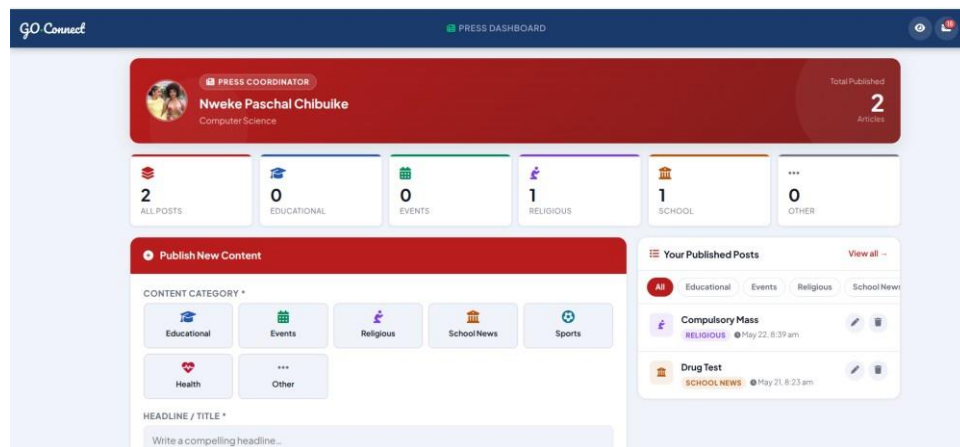


Figure 4.4: Press Dashboard Interface — Go-Connect

4.4.2 Discussion of Results and System Performance

All twenty functional test cases were successful with a 100% success rate, and thus, it is clear that GoConnect fully satisfies the functional requirement as outlined in Chapter Three. In the six dimensions, the overall UAT score was 4.5 out of 5.0, indicating very high levels of user satisfaction from the targeted users. Some of the areas that the users enjoyed include the AJAX interface that did not involve page reloads, dark mode, and the structure of the faculty groups. There were also some minor usability recommendations for future work.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a full summary of the Go-Connect project and concludes with the lessons learned from the research and its implementation, as well as providing recommendations for further development and research. This chapter summarizes the main outcomes with respect to the objectives set out in Chapter One.

5.2 Summary

The problem addressed in this project is a glaring deficiency in the digital infrastructure of Godfrey Okoye University. This deficiency is the lack of a purpose-designed institution-specific social media platform that meets the dual needs for social connectivity and administrative/academic/spiritual engagement for its students. In Chapter One the project context and the problem statement for Go-Connect were outlined along with its objectives, significance, and scope.

It found that students were being forced to utilize fragmented, general-purpose social media applications – chiefly WhatsApp, Facebook and external websites – without academic organization, any institutional context, content control, or alignment with the Catholic ethos of the university.

Chapter Two conducted an in-depth literature review across areas of social media usage in education, digital platforms for universities, modern web development frameworks, social networking architecture, and social media security. This review covered seventeen individual sources, and in the research gap analysis identified that no system previously existed which simultaneously offered the full complement of five different key services, integrated in a single Nigerian university-specific context. In Chapter Three, a detailed systems analysis (comparison of current and proposed), complete requirements specification (16 functional, 8 non-functional), and a complete suite of system design diagrams (Use Case, Activity, System Architecture, Class, Sequence, Entity-Relationship, Entity Descriptions) and associated database table designs were presented. In Chapter Four, details of the implementation of all nine major functional modules of the system (Authentication, Social Feed, Stories, Messaging, Faculty Groups, Press Management, Marketplace, Mentorship, Admin Dashboard) were documented.

All 20 functional test cases for the developed system were passed and User Acceptance Testing conducted on a sample of 10 GOU students produced a mean satisfaction score of 4.5/5.

5.3 Conclusion

Implementation of Bcrypt password hashing, PDO prepared statements, session regeneration upon login, and admin controlling of account activation securely delivers a reliable authentication system and restricted access to platform to authorized Godfrey Okoye University members. AJAX enabled social feed that allows real-time creation of new posts, liking posts, commenting on posts, sharing of posts, and infinite scrolling without full page reloads that will simulate the experience of popular commercial social media sites but still be restricted to our community provides an institutional, targeted approach. The 4.5/5.0 usability score from the user acceptance tests for the feed is a testament to this aim being successful. The faculty group module that provides for each of Go-Connects faculties a unique landing page that consists of a hero banner, four-tab layout (posts, members, resources, events) with access controls to members, management of faculty group membership, and a separate tab for university-level press members will successfully create more defined and organized academic groups within Go-Connect.

The private messaging that allows for viewing and managing inbox with the ability to view conversations and see the most recent messages in addition to unread message count display via a badge and an auto-scroll down to the newest message will be a successful private communication solution.

The press management section will give the university a controlled and verified means of official communication to its students, thus improving on the informal group WhatsApp broadcast methods previously in use. The marketplace will serve as a internal trading platform whereby students can advertise, upload photos and prices of goods that they wish to sell, and make the goods visible and readily accessible to other members within the Go-Connect community who are verified GOU members. The 24hour story function that expires automatically includes the ability for students to post animated stories which show progress bar as the user clicks through the next stories, including captions will add a timely social communication feature that is appealing to the demographic. The mentor registration and matching system that allows for younger members of the university community to find and register as amentee, and for older students to become mentors for their department (e.g., 3rd year students mentored by professors in their faculty, but is aimed to allow upper years mentoring juniors) will add a useful feature that builds the community from within. All twenty planned functional tests passed 100% of the time.

The User Acceptance Tests show an overwhelmingly positive score for all surveyed categories. These results collectively show that Go-Connect has met the requirements as defined by the user acceptance tests and the functional tests, thereby meeting its stated objectives. Go-Connect is more than just a software project; it is an embodiment of the ideals of Godfrey Okoye University- Lux et Veritas- providing both light to the digital experiences of its students and truth to the messages that guide their academic journey.

5.4 Recommendations

The following are some suggestions for the future improvement, adoption and extension of Go-Connect based on the outcomes of the project:

- 1. WebSocket:** replace AJAX polling in the messaging system by using the WebSocket-based

real-time communication library(Socket.IO, PHP Ratchet) for immediate instant messaging

2. Progressive Web App (PWA): use of service workers and a web app manifest to achieve an offline mode, notifications, and a home screen launch experience in the mobile phones

3. AI Content Moderation: connect the platform to an Automated content moderation API, in order to limit human moderators the chance to deal with harmful content.

4. Edit Post: Implement edit post function with an edit history to allow the users modify the posts, and have transparency on editing history.

5. Video Call: the module for instant messaging can integrate the ability for peer to peer video calls using WebRTC which can be useful to facilitate virtual mentorship sessions and online study groups.

6. Advance Search: Enable full text search capability across the entire data set on the system; including all the posts, all users and market places, and press articles, either through the native database's full text indexes (e.g. MySQL FULLTEXT) or an external search engine.

7. Longitudinal study: We suggest conducting a study to compare the academic achievement of GOU students before and after the introduction of Go-Connect, which would provide us with empirical evidence of the educational benefit of our platform.

8. Institutional Adoption: We highly recommend Godfrey Okoye University's administration endorse Go-Connect as the University's official student platform, and mandate each department and Faculty to have a press coordinator.

9. Integrate with external Systems: The integration between Go-Connect and the university's calendar and student registration systems should be a high priority in the next development phase of the platform.

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