

# **DEVELOPMENT OF A WEB-BASED SIWES SUPERVISORY SYSTEM**

BY:

Adetunji Samuel Ayoluwa

(21/10MSS004)

DEPARTMENT OF MATHEMATICAL AND COMPUTING SCIENCES

FACULTY OF COMPUTING AND APPLIED SCIENCES

THOMAS ADEWUMI UNIVERSITY, OKO-IRESE, NIGERIA.

AUGUST, 2025

# **DEVELOPMENT OF A WEB-BASED SIWES SUPERVISORY SYSTEM**

BY:

Adetunji Samuel Ayoluwa

(21/10MSS004)

A PROJECT SUBMITTED TO

DEPARTMENT OF MATHEMATICAL AND COMPUTING SCIENCES

FACULTY OF COMPUTING AND APPLIED SCIENCES

THOMAS ADEWUMI UNIVERSITY, OKO-IRESE, KWARA STATE, NIGERIA.

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE  
BACHELOR OF SCIENCE (HONOURS) DEGREE IN COMPUTER SCIENCE

AUGUST, 2025

## CERTIFICATION

This is to certify that this project, Development of a Web-Based SIWES System, was carried out by Adetunji Samuel Ayoluwa (Matriculation Number: 21/10MSS004) of the Software Engineering programme under my supervision.



.....  
Dr. E.K Olatunji  
(Supervisor)

14/10/2025

.....  
Date



.....  
Dr. O. J Olabode  
(Head of Department)

14/10/2025

.....  
Date

## APPROVAL

This project has been approved for the Department of Mathematical and Computing Sciences, Faculty of Computing and Applied Sciences, Thomas Adewumi University, Oko-Irese, Kwara State, Nigeria



14/10/2025

Dr. E.K Olatunji  
(Supervisor)

.....  
Signature and Date




14/10/2025

Dr. O.J Olabode  
Head of Department

.....  
Signature and Date

Prof. Ayodele Adebisi  
Name of External Examiner  
External Examiner



14/10/2025  
.....  
Signature and Date

## **DEDICATION**

This project is dedicated to God Almighty for the abundant grace, wisdom, knowledge, skills given to me all through my life, especially during my stay in Thomas Adewumi University, Oko, Kwara State, Nigeria.

## **ACKNOWLEDGEMENT**

I will like to acknowledge the sustaining power of the Almighty God for wisdom and understanding. I will like to acknowledge the effort of my supervisor Dr. E.K Olatunji for taking time to guide me through this work. I acknowledge the efforts of all the academic, the Program Coordinator in person of Mr. O. Olabode and non-academic staff of the Software Engineering programme for making my stay a worthwhile one; I say God bless you richly. I appreciate my parents in person of Mr and Mrs. Ogundele and my siblings for their support. I am forever grateful. Thank you.

## TABLE OF CONTENTS

|                                       |          |
|---------------------------------------|----------|
| Title Page                            |          |
| Certification.....                    | ii       |
| Approval.....                         | iii      |
| Dedication.....                       | iv       |
| Acknowledgements.....                 | v        |
| Table of Contents.....                | vi       |
| List of Tables.....                   | vii      |
| List of Figures.....                  | x        |
| Abstract.....                         | xi       |
| <br>                                  |          |
| <b>CHAPTER ONE: INTRODUCTION.....</b> | <b>1</b> |
| 1.1 Background Introduction.....      | 1        |
| 1.2 Statement Of The Problem.....     | 1        |
| 1.3 Aim Of The Study.....             | 2        |
| 1.4 Objectives of the Study.....      | 2        |
| 1.5 Significance of Study.....        | 2        |
| 1.7 Scope Of Project.....             | 3        |
| 1.8 Limitation of the Study.....      | 3        |
| 1.6 Methodology.....                  | 3        |
| 1.9 Organization of the Project.....  | 4        |
| 1.10 Definition of terms.....         | 4        |
| a) HTML.....                          | 5        |
| b) CSS.....                           | 5        |
| c) PHP.....                           | 5        |
| d) JAVASCRIPT.....                    | 5        |

|   |           |
|---|-----------|
| e) DATABASE.....  | 5         |
| f) SIWES.....   | 6         |
| g) IT.....  | 6         |
| <b>CHAPTER TWO: LITERATURE REVIEW.....</b>                | <b>7</b>  |
| 2.1 Introduction.....                                     | 7         |
| 2.2 Conceptual Framework.....                             | 8         |
| 2.2.1 History of SIWES.....                               | 8         |
| 2.2.2 History Perspectives of Web-Based SIWES system..... | 10        |
| 2.2.3 Stages of software development life cycle.....      | 13        |
| 2.2.4 Electronic SIWES as an Information system.....      | 14        |
| 2.3 Theoretical Framework.....                            | 14        |
| 2.2.1 Information system design theory.....               | 14        |
| 2.2.2 Social technical theory.....                        | 15        |
| 2.2.3 Actor Network theory.....                           | 15        |
| 2.4 Empirical Framework.....                              | 15        |
| 2.5 Gaps in Existing Research.....                        | 25        |
| 2.6 Summary of the Literature Review.....                 | 25        |
| 2.7 How my project fills the gap.....                     | 26        |
| <b>CHAPTER THREE: SYSTEM DESING AND METHODOLOGY.....</b>  | <b>28</b> |
| 3.1 Introduction.....                                     | 28        |
| 3.2 Analysis Of Existing System.....                      | 29        |
| 3.2.1 Data Collection Method.....                         | 29        |
| 3.2.2 Description of the Existing System.....             | 30        |
| 3.2.3 Problem/Weakness of the Existing System.....        | 30        |
| 3.3 Description Of The Proposed System.....               | 31        |
| 3.3.1 Functional Requirement.....                         | 31        |

|  |    |
|--|----|
| 3.3.2 Non-Functional Requirement.....    | 31 |
| 3.3.3 Benefits of the System.....        | 32 |
| 3.3.4 Overall System Architecture.....   | 34 |
| 3.4 System Design.....                   | 35 |
| 3.4.1 Architectural Design.....          | 36 |
| a) Use-Case Design.....                  | 36 |
| b) Sequence Diagram.....                 | 37 |
| c) Block Diagram.....                    | 38 |
| d) Activity Diagram.....                 | 41 |
| 3.4.2 Database Design.....               | 42 |
| a) User Interface Table.....             | 43 |
| b) Internship Table.....                 | 44 |
| c) Logbook Table.....                    | 45 |
| d) Report Table.....                     | 46 |
| e) Feedback Table.....                   | 46 |
| 3.4.3 Input Design.....                  | 48 |
| a) Student Information.....              | 49 |
| b) Company Information.....              | 50 |
| 3.4.4 Output Design.....                 | 50 |
| a) List of SIWES students.....           | 51 |
| b) SIWES placement details.....          | 52 |
| c) Statistical system SIWES report.....  | 53 |
| 3.5 System Implementation.....           | 54 |
| 3.5.1 Hardware and Software support..... | 55 |
| 3.5.2 Programming Language.....          | 56 |

|   |           |
|---|-----------|
| 3.5.3 Implementation Techniques.....                              | 57        |
| 3.5.4 System Development Tools and Techniques.....                | 59        |
| <b>CHAPTER FOUR: IMPLEMENTATION AND TESTING.....</b>              | <b>62</b> |
| 4.1 Introduction.....   | 62        |
| 4.2 Result of System implementation.....                          | 62        |
| 4.2.1 Graphical User Interface.....                               | 63        |
| a) Home Page.....   | 63        |
| b) Logbook Module.....  | 64        |
| c) SIWES Placement details.....                                   | 65        |
| d) Supervisor Registration.....                                   | 66        |
| e) Assign Supervisors.....  | 67        |
| f) Assign Students.....   | 68        |
| g) Student Information.....                                       | 69        |
| 4.2.2 System Generated Report.....                                | 70        |
| a) List of SIWES students.....                                    | 71        |
| b) Statistical system SIWES report.....                           | 71        |
| c) SIWES placement details.....                                   | 72        |
| 4.3 System Documentation.....                                     | 73        |
| 4.3.1 System Deployment.....                                      | 74        |
| 4.3.2 Operating the system.....                                   | 75        |
| 4.3.3 Maintaining the system.....                                 | 75        |
| 4.4 Miscellaneous information of the system.....                  | 76        |
| <b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS.....</b> | <b>77</b> |
| 5.1 Summary.....  | 77        |
| 5.2 Conclusion.....   | 77        |

5.3 Recommendation.....78  
REFERENCE.....79  
APPENDIX.....82

## LIST OF FIGURES

| Figure No. | Title/Description                                  | Page |
|------------|--|------|
| Figure 3.1 | System Architecture of the SIWES Management System | 35   |
| Figure 3.2 | Use Case Design of the System                      | 37   |
| Figure 3.3 | Sequence Diagram of the System                     | 38   |
| Figure 3.4 | Block Diagram of the System                        | 41   |
| Figure 3.5 | Activity Diagram of the System                     | 42   |
| Figure 3.6 | Class Diagram of the System                        | 50   |
| Figure 3.7 | List of SIWES Students                             | 51   |
| Figure 3.8 | SIWES Placement Details                            | 52   |
| Figure 3.9 | Statistical System SIWES Report                    | 53   |
| Figure 4.1 | Home Page of the System                            | 64   |
| Figure 4.2 | Logbook of the System                              | 65   |
| Figure 4.3 | SIWES Placement Details                            | 66   |
| Figure 4.4 | Supervisors Registration                           | 67   |
| Figure 4.5 | Assign Supervisors                                 | 68   |
| Figure 4.6 | Assign Students                                    | 69   |
| Figure 4.7 | Student Information                                | 70   |
| Figure 4.8 | List of SIWES Students                             | 71   |
| Figure 4.9 | Statistical SIWES Report                           | 71   |
| Figure 5.0 | Statistical SIWES Report Barchart                  | 72   |
| Figure 5.1 | SIWES Placement Details                            | 73   |

## **LIST OF TABLES**

| Table No. | Title/Description                  | Page |
|-----------|------------------------------------|------|
| Table 3.1 | User Interface Table of the System | 43   |
| Table 3.2 | Internship Table of the System     | 44   |
| Table 3.3 | Logbook Table of the System        | 45   |
| Table 3.4 | Report Table of the System         | 46   |
| Table 3.5 | Feedback Table of the System       | 46   |

## **ABSTRACT**

The management of Student Industrial Work Experience Scheme (SIWES) at Thomas Adewumi University has hitherto been bedeviled by excessive paperwork, fragmented communication channels, and the lack of a centralized platform for tracking student progress. These challenges have resulted in administrative inefficiencies, miscommunication between students and supervisors, and difficulties in maintaining accurate records. This project proposes a web-based SIWES management system as a solution to streamline processes, enhance communication, and enable real-time monitoring. The development of the system began with a detailed study of the existing manual system through observation, literature review, and internet-based research. System requirements were modeled using Unified Modeling Language (UML) tools such as Use Case Diagrams, Sequence Diagrams, and Entity Relationship Diagrams (ERDs). This structured design approach provided a clear blueprint for the system's architecture and workflow before implementation. The implementation of the system employed HTML, CSS, and JavaScript for creating responsive and interactive user interfaces, PHP for handling server-side logic, and MySQL for efficient data storage and retrieval. The developed system offers a scalable, user-friendly, and centralized solution to the University's SIWES management operations. By digitizing administrative processes, it reduces workload, improves coordination, and enhances record management. This project demonstrates the potential of web-based technologies to address real-world administrative challenges in education, representing a significant step toward the modernization and efficiency of industrial training management at Thomas Adewumi University.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the study**

The student Industrial Work Experience Scheme(SIWES) is a crucial components of many academic programs designed to bridge the gap between theoretical knowledge and practical application in the real-world environments. It provides students with invaluable hands-on experience, allowing them to develop professional skills, network with industry professionals and gain a better understanding of their chosen field.

While SIWES offers significant benefits, the traditional manual processes often associated with its management present numerous challenges. These challenges include difficulties in student placement details, communication bottlenecks between student and supervisors. These inefficiencies can hinder the effectiveness of the SIWES program and limit its potential impact. The advent of Web-based technologies offers a promising solution to these challenges. Web-based systems provide a platform for managing information, streamlining communication and automating key processes. This study intense to develop a Web-based SIWES management system for Thomas Adewumi University to address the limitations of the current manual system.

#### **1.2 Statement of the Problem**

The current manual SIWES management process at Thomas Adewumi University is characterized by several key challenges. Firstly, the extensive paperwork involved in tracking student progress, submitting reports and managing assessments creates a significant administrative burden for both students and supervisors. Secondly,

Communication between students and supervisors is often fragmented and unreliable leading to misunderstandings. Thirdly, the lack of centralized system makes it difficult to monitor student progress online. Deployment of Web-based technologies will greatly minimize this challenges.

### **1.3 Aim and objectives of the study**

The main aim is to develop a user friendly web based SIWES management System.

Objectives of the study

- a) Requirements gathering from students, lecturers and SIWES director
- b) Design of the system
- c) Implementation of the designed system
- d) Testing the system
- e) Evaluating the system performance and stability

### **1.4 Significance of the study**

A web-based SIWES system will significantly improve the efficiency and effectiveness of managing SIWES by allowing online monitoring supervisory of students' progress, streamlined communication between students, supervisors and institution, automated record-keeping and easier access to crucial information ultimately enhancing the overall quality of the Industrial training experience for the students

- a) Reduced costs: Reduces the cost of transportation of supervisors, as they don't need to physically travel to placement sites for monitoring and feedback. This crucially reduces travel expenses like fuel and transportation costs.

- b) Convenience: The system can be accessed anytime, anywhere with an internet connection, offering flexibility and convenience for the students and the supervisor. It facilitates seamless communication between students and supervisors.
- c) Greatly minimize the risk of traveling: The potential dangers, uncertainties or adverse events that supervisors may face while on a trip. These risks can be related to security, safety, finances or environmental factors. Mitigating these risks involves enhancing supervisor safety.

### **1.5 Scope of the study**

The study will focus on the development of a web-based SIWES management system for Thomas Adewumi University. The system will include modules for student registration, placement details, communication and reporting.

### **1.6 Limitation of the Study**

The development of a web-based SIWES system, while beneficial, comes with several limitations. One of the major challenges is its reliance on stable internet connectivity, which may not be available to all users, especially those in rural or underdeveloped areas. Additionally, users such as students, supervisors, and siwes director may have different levels of digital literacy, which can hinder effective use of the platform and require continuous training or support. Data privacy and security are also concerns, as the system handles sensitive student and institutional information that must be protected from unauthorized access and breaches. Moreover, the platform's technical infrastructure especially when built on WAMP may not scale efficiently for large numbers of users.

### **1.7 Methodology**

The methodology used in developing this project work include obtaining information on manual system of placement systems. The methods also include: analytical and critical study of the existing systems, observation and obtaining information by searching through the internet. The design was then carried out using UML Use Case Diagram, Sequence Diagram and Entity Relation Diagram (ERD).

HTML, CSS, JavaScript and PHP programming language was used for the implementation and My Structured Query Language (MySQL) as the database of the system Windows, Apache, MySQL, PHP (WAMP) was used as the localhost to enhance the efficient function of the program.

### **1.8 Organization of the study**

This study is organized into five chapters.

Chapter one provides an introduction to the study, including the background, problem statement, aim and objectives, research questions, significance, scope, and limitations.

Chapter two reviews the related literature on SIWES management and web-based systems.

Chapter three describes the methodology used in the development of the system.

Chapter four presents the design and implementation details of the system.

Chapter five discusses the results and findings of the study, draws conclusions, and provides recommendations for future research.

### **1.9 Definition of Terms**

## **HTML**

Hyper Text Markup Language (HTML) is the average markup language for documents premeditated to be demonstrated in a web browser. Web browsers accept HTML documents from a web server or from local storage and concentrate the documents into audiovisual aid web pages. HTML pronounces the construction of a web page semantically and initially encompassed reminders for the attendance of the document.

## **CSS**

Cascading Style Sheets (CSS) is a style sheet language used for unfolding the demonstration of a document inscribed in a markup language such as HTML. CSS is a foundation technology of the World Wide Web, alongside HTML and JavaScript.

## **PHP**

PHP is a general-determination scripting language particularly suited to web development PHP code is habitually administered on a web server by a PHP interpreter instigated as a module, a daemon or as Common Gateway Interface (CGI) executable.

## **JAVASCRIPT**

JavaScript, often abbreviated as JS, is a versatile programming language primarily used to create interactive and dynamic content on websites. It is one of the core technologies of the web, alongside HTML and CSS.

## **DATABASE**

Database is a prearranged collection of data stored and accessed electronically from a computer system. Where databases are more compound, they are often established using formal design and modeling procedures.

## **SIWES**

The Students Industrial Work Experience Scheme (SIWES) is a skills training programme designed to expose and prepare students of universities and other tertiary institutions for the Industrial Work situation they are likely to meet after graduation.

## **IT**

Industrial training (IT) is referred to as a program that offers good practical training in the quantified time frame. Industrial training provides students with significant skills and practical acquaintance and stimulates them to become successful professionals.

## CHAPTER TWO

### LITERATURE REVIEW

#### **2.1 Introduction**

Within the past few years, there have been a consistent growth of interest in Information and Communication technology and the consequent demographic changes in our society. Most segments of the economy have been influenced in one way or the other mostly due to better access to information. There's been a shift in trend of the working pattern of the twenty first century human. One sector which has been greatly affected by the growth in information technology is the Education sector with changes in patterns of research and collaboration between academics students, social interaction and information dissemination, examination pattern and so on. There are various software and applications that have been developed to aid learning. Within the university community, logbook is commonly used and often required. In the developed parts of the world many researches have moved from the traditional paper logbooks to some sort of electronic logbook. Some have used electronic logbooks for as long as 17 years, for example the Alcator (Alto Campo Torus) experiment at MASSACHUSETTS Institute of Technology started using an electronic logbook in 1991. Many have developed their own electronic logbook from scratch, others have taken one of some available solutions and adapted it for their own use. Mikael B̄arlund(2008) With regards to students' industrial training, electronic logbook is almost as important as the Industrial Training itself since it is needed in order to maintain a set of log entries made by interns who might be located in different physical locations. An electronic logbook also facilitates multiple simultaneous access, easy search ability and other

functionalities that the traditional logbook cannot support. A logbook was once a book for recording readings from the ship log, and it's now used to figure out how far a ship has sailed in a certain length of time. The distance traveled with regard to a particular start point has been calculated using the log data in equal time intervals. Today's ship's log has grown to comprise of many other types of information, and is a record of functioning data relating to a ship or submarine, such as weather conditions, times of routine events and significant incidents, crew complement or what ports were docked at and when. It is essential to traditional navigation, and must be filled in at least daily. Today, Logbook is used in a variety of areas, ranging from professional to academic and research, information gathering through data mining etc. The dramatic growth in information resulted in the need to for an efficient way of keeping and retrieving vital information and to also be able to guarantee the integrity of such stored information, protecting it from harm or unwanted manipulation and/or interference. A logbook is usually written in paper (book of log), it is therefore susceptible to damage since books can get torn, wear out easily or be easily damaged. A better way to store information is the electronic logbook.

## **2.2 Conceptual Framework**

### **History of SIWES**

In 1973, the Industrial Training Fund (ITF) created the Students Industrial Work Experience Scheme (SIWES) in response to a rising concern among industrialists that graduates of higher education institutions lack enough practical background studies to prepare them for work in industry Sylvester et al., (2017). The ITF withdrew from managing the Development of an Electronic Secure Students' Industrial Works Experience Scheme Placement System

Volume 14 (2022), Issue 2 33 scheme in 1979 due to organizational logistics issues and increased financial burdens as a result of SIWES' rapid expansion, but this has since changed as the scheme is now funded by the Federal Government of Nigeria (FGN) and managed by the ITF ( Yemisi, 2015). In 1985, the FGN reviewed the Scheme, and Decree No. 16 of August 1985 required that "all students enrolled in specialized engineering, technical, business, applied sciences, and applied arts should have supervised industry attachment as part of their studies." It also directed the ITF to resume full administration of the Scheme in collaboration with all the institutions supervising agencies (NUC, NBTE and NCCE) (Adeyewa,2015). The Scheme's aims, which include bridging the gap between theory and practice among engineering and technology students in Nigerian institutions of higher learning, have been actively and effectively pursued.

Industrial training is a bridge from the classroom to the workplace defined industrial training as an opportunity to test skills, interests and career choices in real work situations while obtaining an edge on "inexperienced" job market competitors (Collins, 2000). The industrial training program has become a necessity for students to partake in order to complete their educational program, especially students of the Science, Engineering, and Technology disciplines. Evaluated students in various areas which can be summarized into three main areas which are attitude, communication and work attitude before and after the industrial training program. The results showed that the average score of the students increased from 48% - 63% before the Industrial Training to 89% - 95% after the Industrial Training. (S. Osman and M. Rahman, 2008) Over the years the industrial training has been very beneficial to students, noted that students see the industrial training as a means to land their first job, found that students view internships as a valuable learning experience

through which they receive an academic grade and also financial compensation. The advantages of Industrial Training include: Industrial training provides a platform that renders practical knowledge of all they have been taught in school. Students are trained, tutored and mentored by trained and seasoned professionals. Industrial Training helps students to gain valuable work experience for some students this might be the first time of them in a working environment in the real world. In this current world where “who you know” matters a lot, industrial training provides a platform for students to network with professionals who are years ahead of them. A lot of companies use industrial training as a means to recruit new staff. Industrial Training thereby provides job opportunities for students once they graduate. From the establishment of ITF and SIWES scheme, the management and supervision of students on SIWES has been manual. That is, ITF teams, institution supervisors have to travel across the nation to supervise students on SIWES. Students have to travel to their institutions to submit their acceptance letters from their employer industry. The challenges and the risks involved have made this process very stressful and inadequate leading to the inability of the full realization of the said objective of the scheme. Several researches have been carried out in an attempt to solve the challenge of coordination and supervision of SIWES Scheme to ensure full realization of the set objective.

### **Historical Perspectives of Web-Based SIWES System**

According to wavetrax (2014), “the ship’s log originated from the small wooden board or ‘Chip Log’, often weighted with lead that was for centuries attached to a line and thrown over the stern. The log's weight would keep it in the same spot in the water while the ship sailed away. Mariners may measure the pace of their trip by measuring the length of line utilized in

a given period of time. The course, speed, and other details about a journey were recorded in a journal called a log as the voyage progressed. Before the invention of technology, these records were the only way to keep track of what had transpired. They helped navigators conclude where they were and how far they had travelled and how much lengthier they had to stay at sea. They provided culpability to a ship's owners and traders. They were designed to be as resistant to faking as possible. Away from land, there was usually no dependable substantiation of events apart from the crew's own account in the middle of an expanse of blue and grey and green; and in long journeys, memories always blur and facts disband. A log provided as accurate an account as could be gathered in real time. National Maritime Museum Royal Observatory (2014) records were kept from the earliest days of exploration in the 15th century when the Portuguese mariners took to the open ocean, leaving familiar landmarks and coastlines behind them. At first these were jealously guarded secret documents holding the key to the routes for the spice trade and the riches of the Orient. Some were more humble accounts of the wonders encountered by Europeans as they ventured into the exotic world of the Middle and Far East. Of these early attempts to forge trade links few documents remain, although those of Christopher Columbus's epic undertaking to find a route to china and the Spice Islands, only of course to find 'a New World', have been transcribed many times. The passage of time saw more ships from more nations engaging in deep sea trade, exploration and inevitably war. The number of voyages increased dramatically in the 17th century as the imperial powers of Spain and Portugal found themselves competing with France, Holland and England. Voyages of primary exploration were replaced by undertakings of a state-run nature, such as empire building, trade and administration. At the same time, the officers of these ships began to keep official records,

which were the beginnings of the logbook, similar to what is used today. English logbooks survive from as early as the mid-17th century and a few more general journals from even earlier. By 1730, the Admiralty identified the need for consistency and issued the order in their Naval Instructions of 1731:

The shift from traditional paper-based logbooks to their web-based counterparts represents a significant evolution in record-keeping across numerous sectors. Historically, logbooks, used for detailed and systematic records, were primarily physical documents, crucial in fields like maritime navigation and scientific research. However, with the advent of computers and the internet, electronic logbooks emerged, offering improved efficiency and accessibility. As internet access became more widespread, web-based logbooks took center stage, allowing users to access and manage their records remotely from any internet-connected device. This transition brought forth several key advantages: enhanced accessibility, ensuring records could be accessed from anywhere; increased durability, as digital storage protects against the physical degradation and loss associated with paper; improved collaboration, enabling multiple users to access and edit simultaneously; and superior searchability, making it easier to locate specific information within the records. Consequently, web-based logbooks have found applications in diverse fields, including maritime, where sailors record ship operations; medical, where healthcare professionals track patient data; education, for documenting student progress; scientific research, for recording experiments; and industrial work, for monitoring complex machinery. The trend towards web-based logbooks continues to grow, driven by their inherent flexibility and accessibility, marking a clear preference for digital solutions in modern record-keeping practices.

## Stages of Software Development life Cycle

### a. Requirements Gathering and Analysis

This stage involves identifying and documenting the specific needs of students, supervisors, and coordinators. It ensures that the requirements are feasible, clearly defined, and aligned with the objectives of the SIWES program.

### b. Design

Based on the gathered requirements, various system designs are created. These include architectural design, use case diagrams, sequence diagrams, activity diagrams, class diagrams, user interface designs, and database schema. The design phase serves as a blueprint for the system's implementation.

### c. Implementation

In this phase, the actual coding of the system takes place. Write and compile code according to the design specifications. The frontend, backend, and database components are developed, and unit testing is performed simultaneously to catch early bugs.

### d. Testing

This phase ensures that the system functions as intended. It involves running several tests such as functional testing, integration testing, performance testing, and security testing to verify that all requirements are met and the system is stable.

### e. Deployment

After successful testing, the system is deployed to the production environment. Final checks are performed to ensure that the system operates correctly in the real-world setting and is accessible to all intended users.

f. Maintenance

Post-deployment, the system is monitored for issues. Bugs are fixed, performance is optimized, and improvements are made to ensure the system remains reliable, efficient, and scalable over time.

## **Electronic SIWES as an Information System**

### Definition of Information System

An information system (IS) is a set of interconnected components, including hardware, software, data, people, and processes, designed to collect, process, store, and distribute information to support decision-making and other organizational functions.

Electronic SIWES functions as a dedicated information system that leverages interconnected digital components like online registration, digitized logbooks and assessments, online monitoring tools, information broadcasting, a database, security protocols, communication features and potential integration with other Thomas Adewumi university to effectively manage and streamline the Student Industrial Work Experience Scheme, ultimately enhancing efficiency, communication, monitoring, data handling, accessibility, and collaboration within the program.

## **2.3 Theoretical Framework**

### **Information Systems Design Theory (ISDT)**

This theory provides principles for designing effective information systems, particularly relevant for web-based applications like SIWES portals. A web-based SIWES (Students

Industrial Work Experience Scheme) theoretical framework leverages information systems design theory (ISDT) to guide the development of effective and user-centric systems, focusing on inclusive, flexible, and integrated solutions for student placement and management(Shirley, 2003).

### **Socio-Technical Theory**

Socio-Technical Theory (STT) provides a comprehensive framework for understanding the interplay between social and technical elements within an organization or system. This theory posits that the successful implementation of a system requires a balanced consideration of both its social context and technical capabilities (Baxter & Sommerville, 2011). In the context of the development of an Electronic Secure Students' Works Experience Scheme (SIWES) Placement System, STT is particularly relevant.

### **Actor-Network Theory (ANT)**

Actor-Network Theory (ANT) is another valuable theoretical framework for analyzing the development and implementation of the Electronic Secure Students' Works Experience Scheme Placement System. ANT emphasizes the roles and interactions of both human and non-human actors within a network, treating technology, individuals, and organizations as interconnected entities that influence each other (Latour, 2005).

## **2.4 REVIEW OF RELATED WORK(Empirical Framework)**

Here, related systems are presented and compared with the proposed system.

Though gratifying to note that Scheme is crucial and aimed at producing skilled labour required by the Nigerian economy, it is constantly encountering array of challenges. There are some visible challenges facing students' industrial work experience scheme which hinder the fulfillment of its objectives even in Federal University of Technology, Minna (FUTMINNA). In a bid to identify these challenges, Ogbuanya et al., (2018) carried out research which postulated 10 unique challenges faced by the scheme. These includes challenge of finance to the students and supervisors to ease their burden during the programme, challenge of securing a place for attachment, lack of proper planning of SIWES programme among others. This study of Ogbuanya et al., (2018) recommended solutions to these identified challenges. This is also in agreement with Oladimeji et al., (2017) who stated that the challenges were also not limited to inadequate finance, difficulties experienced when searching for placement, delay in payment and lack of proper orientation. Worthy of note is the lack of adequate placement for prospective students, and from study undertaken by Ogbuanya et al., (2018), this takes the second place on prevalent challenges bedeviling the scheme aside inadequate or proper financing. The article recommended provision of adequate places of industrial attachment. Considering the increase in number of students and departments participating in SIWES programme in FUTMINNA and other institutions, it has become difficult to place all the students for the SIWES training by the unit in-charge so most students are left with the task of sourcing for placement themselves hence the need to leverage information technology for this selfsame function. Information Technology (IT) and computers in general has a major impact on the society and the last few years have seen an incredible increase in the capabilities and use of technology. Going on is an era of simplifying almost all complicated works using technology, Bhamra et al., (2016). According to Adeyewa,

Z., (2015), the traditional way of operating the programme has been that of manual or analogue method over the years, there is a need to modernize the operations for effectiveness and efficiency in the placement function of the scheme. The internet is a popular medium for accessing and sharing information in today's technological environment, as it is the simplest and fastest means to transmit and retrieve information. It also provides an unlimited access to anyone, at any place and time. The intended system of digitalization intends a user-friendly operation which possibly will resolve ambiguity and achieve certainty based on a web application that pays attention to security. Security is another concerned with the confidentiality, integrity, and availability of systems and data in general. Confidentiality refers to the ability to keep data secret and protected against unlawful disclosure to only authorized parties. Integrity echoes information accuracy and necessitates technology and methods that prevent unauthorized parties from improperly altering data. Availability on the other hand refers to the ability that guarantees that information is available to end users on a timely basis in order to meet assigned requirements Fredj et al., (2021), Gaikwad, P. & Bhatt, P., (2016), Li, J. (2020). Security in the context of a Web application simply means safeguarding the confidentiality, integrity, and availability of Web assets (Web pages and databases). Understanding the vulnerabilities being faced by existing web applications will help the underlining study in knowing how to go about building a secure web application. The Open Web Application Security Project (OWASP) is a nonprofit foundation dedicated to enhancing and providing a source for securing the web application Kirk, J. (2017), the de facto standard for categorizing web application vulnerabilities prioritizes the top 10 according to their prevalence, exploitability, detectability and impact which greatly reduces the confidentiality, integrity and availability

of web applications. Using this guild provides a means to developing secure web application software that minimizes vulnerabilities. Adding to previous research that suggests that undergraduate work experience in general, and the SIWES program in particular, has a positive impact on a student's early career success, Oladimeji et al., (2017) found that those who work in government establishments, including the organized private sector, are exposed to better opportunities for developing employability skills than those who work in the private sector. Ogbuanya et al., (2018) carried out a study to evaluate the effectiveness of SIWES programme using an entire population of about 130 respondents, lecturers and industry supervisors inclusive and based on the findings of the study, 10 challenges of SIWES in developing the required skill in the industry and 15 approaches that can be assumed in evaluating the effectiveness of SIWES in Nigeria were also agreed. Moreover, in an early attempt to obtain feedback on the Students' Industrial Work Experience Scheme from students who are the major beneficiaries of the scheme, Ibegbulam et al., (2017) carried out a research and in its findings posited that the industrial training as it is presently organized is not sufficiently meeting the practical needs of students. Stakeholders involved should be involved in the programme from placement to the actual training. Adeyewa, Z., (2015) stresses the numerous benefits of modernizing the SIWES programme through the use of ICT which includes efficiency, promptness, cost effectiveness, scalability, mobility and the satisfaction of stakeholders. Through the Development of an Electronic Secure Students' Industrial Works Experience Scheme Placement System 34 Volume 14 (2022), Issue 2 powerful combination of technology and people, the pitfalls of the past can be avoided to create a better tomorrow. By leveraging on the enormous potential of IT and our dynamic youth, the SIWES programme can become an interesting and a very successful venture. In

addition, Adeyewa, Z. (2015) stresses that placement of students could be automated from the robust database in the enrolment system. The enrolment database essentially becomes a shopping center for organizations or any stakeholder to pick candidates. It must therefore be a searchable database. Students who are placed either directly by companies or through the students by own efforts are flagged and documented appropriately in terms of name of company, location. After discovering that the current system of student management during the SIWES period is ineffective, as it frequently involves supervisors physically visiting students, incurring some operating costs, and that, in addition to monitoring, mentoring is another important role of the supervisor Babalola et al., (2015), leveraging-on-web-based technology to solve these problems. Students registration and payment processes for the scheme being semi-manual lead Sylvester et al., (2017) to design a system web based in order to automate these processes enabling the SIWES unit to be able to manage the large amount of data inflow during the SIWES period. Furthermore, Zachariah, B. & Yabuwat, P. (2016) made a research to develop a cloud based that would allow for near real-time collaborative supervision of students' experience during SIWES and recommendations were made that would allow for proper management of the processes by the Institutions, Industries, and Industrial Training Fund (ITF), students being able to report their daily activities and also upload picture of themselves in such sessions; and both the ITF, Industrial, and Institution-based supervisors can monitor and make recommendations to the students. The system was executed using PHP, JavaScript, CSS, Ajax technologies, MySQL database and hosted on Google Cloud Infrastructure. The online software could not be reviewed properly as servers were down. Considering the difficulties encountered in securing placements for SIWES and how its negatively impacts the final grades of some undergraduate students,

Ogunde, A. & Idialu, J. (2019) proposed a recommender system to solve this challenge. Using past SIWES data, the developed system can recommend suitable place of placements for students based on classification approach. The researchers collected data through questionnaires only in the 20 local government areas of Lagos state Nigeria, and basing its scope on software development and networking company. Though security of the system was not mentioned, it was observed that many companies are aware of this essential program of the government and are doing their best to comply. It is worthy of note that most of these researches had no mention of security in its implementation, except for Oluwatosin, I. (2018) who developed a framework that uses time and location in preventing false reporting of logbook. Using the Google API, students can have access to the system only when they are at their place of primary assignment. Though implemented, the system had access control issues. This research, having identified the challenge of security vulnerability and /threats associated with online and automated SIWES system, developed a new system with adequate security architectures in the kernel and application layers. The system was evaluated against vulnerabilities and found working with the architectures.

Ibrahim et al. (2023) proposed that students' employability may be equally influenced by the standard of theoretical information given to them and the practical training they had in industries, primarily those in the natural sciences. (Adebayo et al., 2022) developed a secured student industrial work experience scheme (SIWES) placement system to take care of the security challenges of the existing automated systems following the challenges faced by the manual processes involved of the scheme in the university. (Adeosun et al., 2022) focused on the role of SIWES in the development of technical skills and reported that all three employers in the study gave favorable feedback, indicating that the time that science

education students spent exposed to the sciences and technology industry did influence their ability to acquire technical skills in tool handling and other occupations. Additionally, the results showed that more than half of the students strongly agreed that their time spent in the workplace influenced how they developed the technical abilities necessary to provide services in a variety of units. According to (Alipichev et al., 2022), an undergraduate industrial work experience program is critical in establishing a student's competency or employability in work organizations after graduation. (Kim, 2019) underlined that students' subjective perceptions of their level of job-relevant preparedness or the integrity of finding and keeping work are related to employability or proficiency. (Ogbuanya et al., 2018) posited that in the contemporary Nigeria, worth of technical education should be related with industrial experience. (Olubisi, 2018) affirmed that SIWES has reached wide scope in recent times, all industrial and commercial establishments contribute to make it operational by providing specific skills inform of experience in distinct occupations. According to (Muhamamadu, 2017), internships in the United States involved job observation, which involves interns spending a lot of time on the job with regular pay while briefly observing real workers. (Ibegbulam, 2017) pointed that SIWES is the major factor in enhancing the efficiency and expertise of the industrial workforce. (Onuba et al., 2016) underlined that in several industries, the lack of economic development seems to have hampered industrial development, which is essential for both long-term employment opportunities and practical training for students. In order to improve how effectively they manage their SIWES procedures, a number of Nigerian institutions, including (UNIZIK, 2014; UNIOSUN, 2015; UNILAG, 2015; UNILORIN, 2016), have also established SIWES portals. (Adetiba et al., 2012), emphasized that an e-SIWES portal can be designed for Nigeria tertiary institution to

automate and enhance the processes of SIWES activities such as registration, dissemination of information, filling of log book, day-to-day activities as well as supervision and assessment of students on SIWES by lecturers and industry based supervisors. The web-based portal implemented online log book and assessment forms used during SIWES for logging by students and assessment by institution based supervisor (lecturer); it also supports notifications broadcast to all students on SIWES. For supervision, assessment and mentoring, lecturers are required to travel to all the industry where students are trained which makes the process very tedious and ineffective. Therefore, the system implemented was to solve such problems. According to Mafe, (2010) engagement in the scheme nowadays includes Sciences, Engineering, Technology, Education, Environmental Studies and Agriculture programmes in Universities and Polytechnics as against only Engineering and Technology when it was established while in Colleges of Education, SIWES covers NCE programmes in Technical Education, Agricultural Education, Business Education, Creative Arts & Design Education, Computer Education and Home Economics Education.

The growing concern among our industrialists is that graduates of our institutions of Higher learning lacks adequate practical background studies preparatory for employment in industries, this led to the formation of students Industrial Work Experience Scheme (SIWES) by ITF in 1993/1994 . ITF has as one of its key functions; to work as cooperative entity with industry and commerce where students in institutions of higher learning can undertake mid-career work experience attachment in industries which are compatible with students' area of study. The Students Industrial Work Experience Scheme (SIWES) is a skill Training programme designed to expose and prepare students of Agriculture, Engineering, Technology, Environmental, Science, Medical Sciences and pure and applied science for the

Industrial work situation which they likely to meet after graduation. Duration of SIWES is four months in Polytechnics at the end of NDI, four months in College of Education at the end of NCE II and six months in the Universities at the end of 300 or 400 or 500 levels depending on the discipline. Growing public demand and legislative expectations for accountability in the past two decades have made it imperative that higher education administrators and researchers pay attention to the potential impact of student work programmes on skill development, which in turn, impacts directly on national development objectives Okpor and Hassan stated that 'if Vocational Technical Education is to be meaningful and successful in Nigeria, then relationships are needed between public and private sectors to partner effectively with Vocational Technical Education and skill acquisition programmes.' SIWES is a core academic requirement carrying six credit units. This requirement must be met by all students in computer science before graduation. It is also compulsory at National Diploma (ND) level and is scheduled in the NBTE curriculum. The training program is undertaken in the third year of a four-year degree Derrick points out that government has recognized the importance of SIWES through the establishment of the Industrial Training Fund (ITF). The ITF was established in 1971 and was charged with human resources development and training. Following the establishment of ITF, SIWES commenced in 1974 stakeholders such as the ITF, institutional based SIWES coordinators, SIWES supervisors who have been in the scheme for up to six (6) years and above. This was done through interview, observations and in rare cases, questionnaires were adopted.

Emmanuel Adetiba, Victor O. Matthew et.al. "Development of e-SIWES portal: A Web based Platform for student Industrial Work Experience Scheme (SIWES) Management". To develop a web-based Platform for student Industrial Work Experience Scheme (SIWES) Management

that allows the manual task of carrying out SIWES activities and supervision assessment by lecturers and industries based supervisors to be carried out using the personal computer and the internet. This work entailed using electronic medium to substitute area of manual task of carrying out SIWES activities and supervision assessment by lecturers and industries based supervisors. Limitation: this study only covers supervision assessment by lecturers and industries based supervisors part of SIWES programme.

Mr. R J LAIRD, School of Engineering, University of Ulster. "Interactive Web based Placement Management – Principles and Practice using Online Placement University System (OPUS)". To explore the use of the Internet to enable students and companies to manage the placement process with the active involvement of the Industrial Placement Coordinator. This involved the development of a unique web-based placement management system specifically by the placements practitioner and the software programmer to become OPUS (Online Placement University System) since autumn 2000. The basic system was able to manage the first cohort of engineering students into placement in 2002. Since these early basics the programme has been developed continuously as an open source product, now at version 4.

Chijioke F. Ugwuanyi , Jonas U. Ezema. "Challenges of Students' Industrial Work Experience Scheme (SIWES) in Library and Information Science in the ICT Environment". To explain the challenges of SIWES pertaining to the incorporation of ICT, the new development, to encourage effective services to users. Some of these developments, according to Ajidahun (2007), include automation and computers in libraries and other information systems. Limitation: Practical works to proffer solutions to those challenges noted were not

considered. With this proposed system, the user may control their information, the provider may promote their opportunities, the student can take action to apply for any vacancy and the placements coordinator may control all features.

## **2.5 Gaps in Existing Research**

Students that are to embark on the program are required to login to their portal, to then click on SIWES and then clicking on SIWES form. There the student would then fill out a SIWES placement form before then printing out an acknowledgement slip. The limitation of these systems is that students are not able to fill their logbook online.

This research, having identified the challenge of security vulnerability and threats associated with online and automated SIWES system, developed a new system with adequate security architectures in the kernel and application layers.

The study of Emmanuel Adetiba, Victor O. Matthew et.al. "Development of e-SIWES portal only covers supervision assessment by lecturers and industries based supervisors" part of SIWES programme.

Practical works to proffer solutions to those challenges noted were not considered of Chijioke F. Ugwuanyi , Jonas U. Ezema. "Challenges of Students' Industrial Work Experience Scheme (SIWES) in Library and Information Science in the ICT Environment"

## **2.6 Summary of the Literature Review**

The core issue is that industrial training, specifically the Student Industrial Work Experience Scheme (SIWES), is incredibly important for students in science, engineering, and

technology. It's the bridge that lets them apply what they've learned in the classroom to real-world work environments. However, the way SIWES is currently managed, relying on manual processes, is inefficient and creates a lot of problems.

Students struggle to find placements, there are financial burdens on both students and supervisors, paperwork gets lost or delayed, and it's just a time-consuming mess. While some institutions have tried to introduce web-based systems, these systems often lack crucial features like online logbooks and strong security measures. This leaves sensitive data vulnerable and makes it hard for supervisors to properly monitor student progress remotely.

We need to move away from paper and towards a secure, web-based platform. This platform should do more than just register students. It should automate the placement process, offer online logbooks where students can digitally record their daily activities, and allow supervisors to monitor progress remotely. It should also handle document management, assessments, and even payment tracking, all in one place.

Security is paramount. We need to protect student and company data with strong encryption and access controls. The system needs to be user-friendly, accessible from any device, and provide clear information and support to all parties involved.

By creating such a platform, we can streamline the entire SIWES process, making it more efficient, cost-effective, and beneficial for everyone involved. It's about using technology to address the current shortcomings and ensure that students get the most out of their industrial training experience.

## **2.7 How my project fills the gap**

In essence, my project steps in to fix the shortcomings of the current SIWES system by offering a comprehensive, all-in-one digital solution. Many existing platforms only cover basic features like student registration, leaving out crucial aspects such as online logbook submission and supervisor feedback. My system goes beyond these limitations by providing a Web-based SIWES platform where students, supervisors, and institutional coordinators can interact seamlessly.

The platform enables students to submit their weekly reports online, while supervisors can review and comment directly through the portal. Coordinators manage all participants from a single dashboard. This digital transformation ensures better accountability, online supervision, secure data management, and efficient communication, all of which are often lacking in the current manual SIWES processes.

By streamlining the entire workflow from registration to final evaluation, this project reduces administrative bottlenecks, enhances transparency, and ensures a more engaging and efficient industrial training experience for all stakeholders.

## **CHAPTER THREE**

### **SYSTEM DESIGN AND METHODOLOGY**

#### **3.1 Introduction of the Proposed System**

The proposed Web-Based SIWES (Student Industrial Work Experience Scheme) Management System is developed to modernize and automate the manual processes involved in managing industrial training activities in tertiary institutions. Traditionally, the SIWES process involves the use of physical logbooks, printed forms, and face-to-face supervision, which can be time-consuming, inefficient, and prone to data loss.

This proposed system aims to provide a centralized, digital platform that streamlines the activities of students, supervisors, and institutional administrators. It enables students to register for SIWES, submit daily or weekly logbook entries, and receive feedback from supervisors all online. Supervisors can easily review student progress, add comments, and verify activities remotely, while administrators can manage placements, monitor progress, and generate reports more efficiently.

By leveraging modern web technologies, the system offers an accessible and secure environment that supports remote access through any standard web browser. It improves the overall coordination and transparency of the industrial training process and reduces the administrative workload on all stakeholders.

The introduction of this system is a step toward enhancing the quality of industrial training, ensuring proper record-keeping, and promoting digital transformation within the University.

## **3.2 Analysis of the Existing System**

System analysis involves examining organizational activities to identify the most efficient ways to perform them. Traditionally, the SIWES logbook is a physical booklet containing various forms and charts, such as student information forms, progress tracking sheets, and supervisor review sections. Additional forms are also included, which must be completed and submitted to the school for further processing. The logbook is used by students to record their daily tasks and activities during their industrial attachment. From the analysis of the current system the following conclusions are drawn:

- (I) The school allocates logbook manually to students.
- (II) Difficulties are experienced in getting information about the students' progress
- (III) It is difficult to keep a logbook safe for the duration of the exercise since it is expected to be filled daily.

### **3.2.1 Data Collection Method**

The methods of data collection used in this project are:

#### **(I) THE PAPER LOGBOOK**

Since the project is a transformation of an existing system into a new format, the format of the old system was adopted the logbook. All fields that are present in the paper logbook are also present in the electronic format.

#### **(II) OBSERVATION**

Due to the importance attached to the need of students and what might possibly complement their industry experiences, information was gathered about the

peculiar need of students which is a good knowledge source and ability to interact with their supervisors at the course of their internship.

### (III) USE OF THE INTERNET

Information was gathered from e books, journals, publications and articles concerning Electronic logbooks.

### **3.2.2 Description of the Existing System**

A requirement defines the intended functions, attributes, and characteristics a system must exhibit to satisfy user needs. The existing system for SIWES supervision is largely manual, involving paper-based processes managed by students, supervisors, and administrators. These activities such as logbook entries, supervision, and placement tracking are often either standalone or interconnected across user roles. The goal of the Thomas Adewumi University SIWES system is to transform these manual processes into a digital format, enhancing efficiency, accessibility, and coordination among all participants.

### **3.2.3 Problem/Weakness of the Existing System**

The following problems can be identified in the existing system;

- Delay in flow of information between various units involve in SIWES coordination
- Presence of redundant information.
- The current system is inflexible to identify changes in terms of place of attachment due to lack of proper channel of passing information.
- The procedure of managing student's record is prone to error.

### **3.3 Description of the Proposed System**

The proposed system is a web-based platform designed to enhance the administration of the Student Industrial Work Experience Scheme (SIWES), a key component of technical and vocational education. SIWES serves to connect academic learning with practical industry experience. Traditionally, its management has relied on manual processes, including the use of physical logbooks, printed documentation, and in-person supervision. This proposed system replaces those methods with a digital solution that streamlines operations. It enables students to register, update logbooks, and submit reports online, while supervisors can review entries and provide feedback remotely. SIWES directors are also granted tools for monitoring and managing activities, ensuring efficient oversight in a secure and user-friendly environment.

#### **3.3.1 Functional Requirements**

The following are the functional requirements for the SIWES portal:

- i) Students log in to the portal and are identified with unique matriculation number and password (registration number) as assigned by the school and as stored in the database.
- ii) Students can fill their logbooks, edit them and view their logbook entry per week. They can also send and receive mails through the portal mailbox.
- iii) Supervisors monitor activities of students on SIWES and comment on a weekly basis.
- iv) SIWES coordinator assigns a set of students to a supervisor from the institution.

#### **3.3.2 Non-Functional Requirements**

As for the non-functional requirements, the system should be relatively easy to use, training would be given to students as needed, however it is expected that minimal training will be required as the system was developed to be relatively easy to use. The web-based SIWES system will be user-friendly and easy to navigate, perform efficiently under normal load conditions, and be scalable to support growing numbers of users and data without compromising performance.

### **3.3.3 Benefits of the System**

The implementation of Thomas Adewumi University SIWES (Student Industrial Work Experience Scheme) management system offers several key benefits that enhance the overall efficiency, transparency, and reliability of the industrial training process. The system addresses the limitations of the manual approach and introduces a modernized platform that supports prompt access, secure data management, and seamless interaction among all stakeholders.

- **Digitization of Manual Processes**

The system transitions traditional paper-based activities such as logbook entries and report submissions into a digital format. This reduces the administrative burden on both students and supervisors and promotes an eco-friendly approach.

- **Prompt Access and Monitoring**

Authorized users including students, supervisors, and siwes directors can access the system remotely via any internet-enabled device. This provides prompt access to logbook entries, placement details, and supervision updates, improving responsiveness and oversight.

➤ Improved Supervision

Supervisors can review weekly entries submitted by students and provide comments within the system. This facilitates closer monitoring of students' industrial attachment performance and ensures that feedback is continuous and traceable.

➤ Centralized Data Management

The system maintains all student, supervisor, and placement data in a centralized MySQL database, which simplifies data retrieval and backup processes. This ensures data consistency, integrity, and security across all modules.

➤ Enhanced Transparency and Accountability

Digital record-keeping enhances traceability and minimizes the risk of manipulation or loss of student records. Each activity is time-stamped and associated with authenticated user accounts, ensuring accountability.

➤ User-Friendly Interface

The system is developed with an intuitive graphical user interface (GUI) using modern web technologies such as HTML, CSS, and JavaScript. This simplifies system navigation and encourages effective utilization by users with varying levels of technical proficiency.

➤ Time and Cost Efficiency

By eliminating the need for physical logbooks, face-to-face supervision, and paper-based communication, the system significantly reduces operational costs and processing time for all parties involved.

➤ Secure Authentication and Authorization

Access to the system is secured through login authentication. Only authorized users can perform specific tasks based on their roles ensuring that sensitive data is protected from unauthorized access.

➤ Support for Institutional Oversight

Administrators can monitor the overall performance of the program, generate reports, and evaluate the effectiveness of placements using the analytical capabilities built into the system.

➤ Scalability and Ease of Maintenance

The web-based nature of the system makes it scalable, allowing future integration of additional features or modules. Its architecture supports easy maintenance, updates, and system enhancements without affecting existing functionalities.

➤ Minimization of Traveling Risk

One of the major advantages of the digital system is the significant reduction in the need for physical travel. In the manual approach, supervisors often had to commute for logbook checks and placement visits. This not only incurred transportation costs but also exposed them to safety and health risks, especially in cases of long-distance travel or during unfavorable conditions such as public health emergencies (e.g., pandemics).

### **3.3.4 Overall System Architecture**

System Architecture represents the overall structure and organization of the software system. It defines how different components of the system interact with each other and how data flows through the system. It serves as a blueprint for both development and

deployment. The proposed system architecture is a three-tier web application with MySQL as the back end, PHP as the bridge between the front-end and the database, and html based web-page as the front end. The application consists of various modules for each category of the system users. Figure 3.1 shows the system architecture.

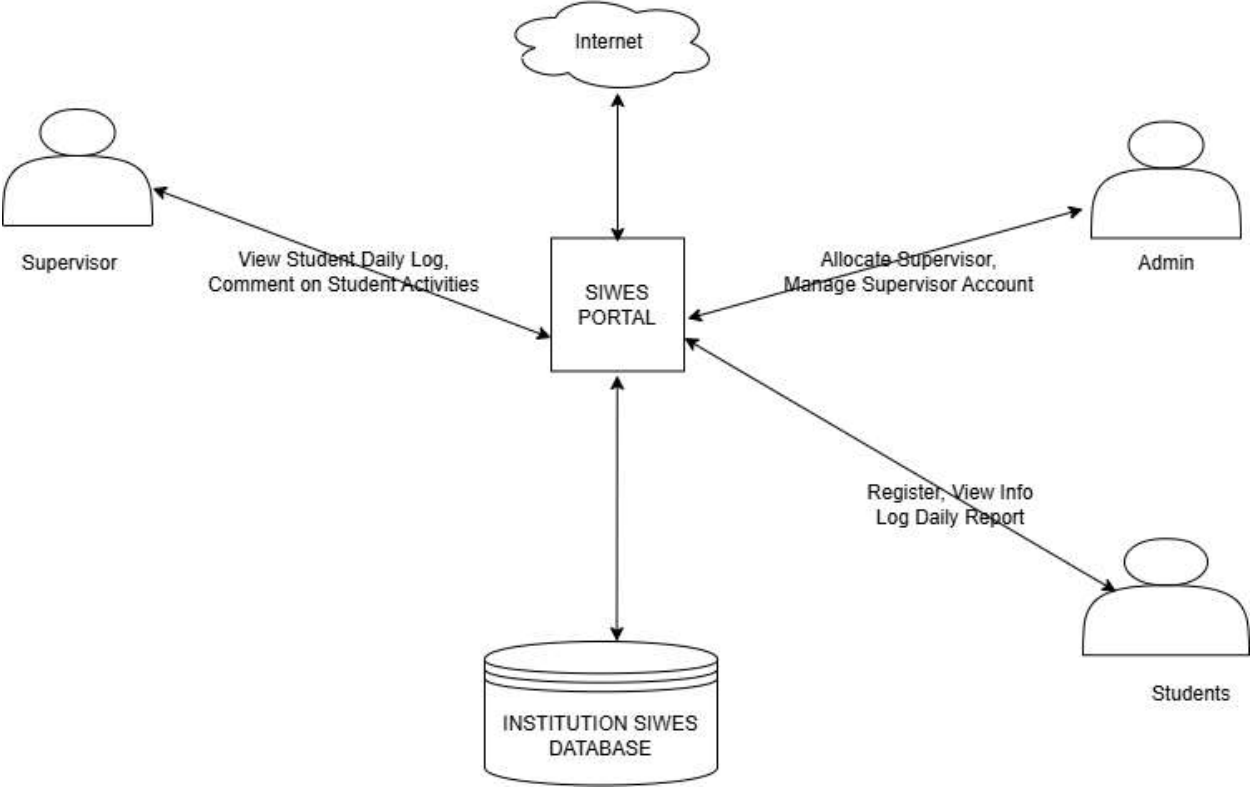


Figure 3.1 System Architecture

**3.4 System Design**

System design is the process of defining the architecture the architecture components, modules, interfaces and data for a proposed system to satisfy specific requirement. It is the application of systems theory to product development. The proposed system was developed

to run on a remote server using web technology and will be accessed by the users using any standard-compliant web browser that supports modern web technologies. The new system will feature a friendly graphical user interface for interacting with the users; the system will feature a security subsystem that will be used to authenticate user requesting access into the system. The Web-Based SIWES system is developed to digitize all manual activities carried out by students during the course of the SIWES placement.

### **3.4.1 Architectural Design**

The architectural design is the process of defining the overall structure of a software system, identifying its main components, their properties, and the relationships between them. It's the blueprint that guides the development process and ensures the system meets its functional and non-functional requirements.

a) The use case model of the UML is used to specify the functionality of the system from the users' point of view and show the way the system and the users interact to achieve its stated functions and perform its goal. Figure 3.2 below shows the use case design of the system. It illustrates key functionalities such as:

- Students can register, fill SIWES details and fill workdone
- Supervisors can review student logs, comment on progress, and monitor assigned students.

This use case diagram provides a structured overview of the system's capabilities and how each user group contributes to the workflow.

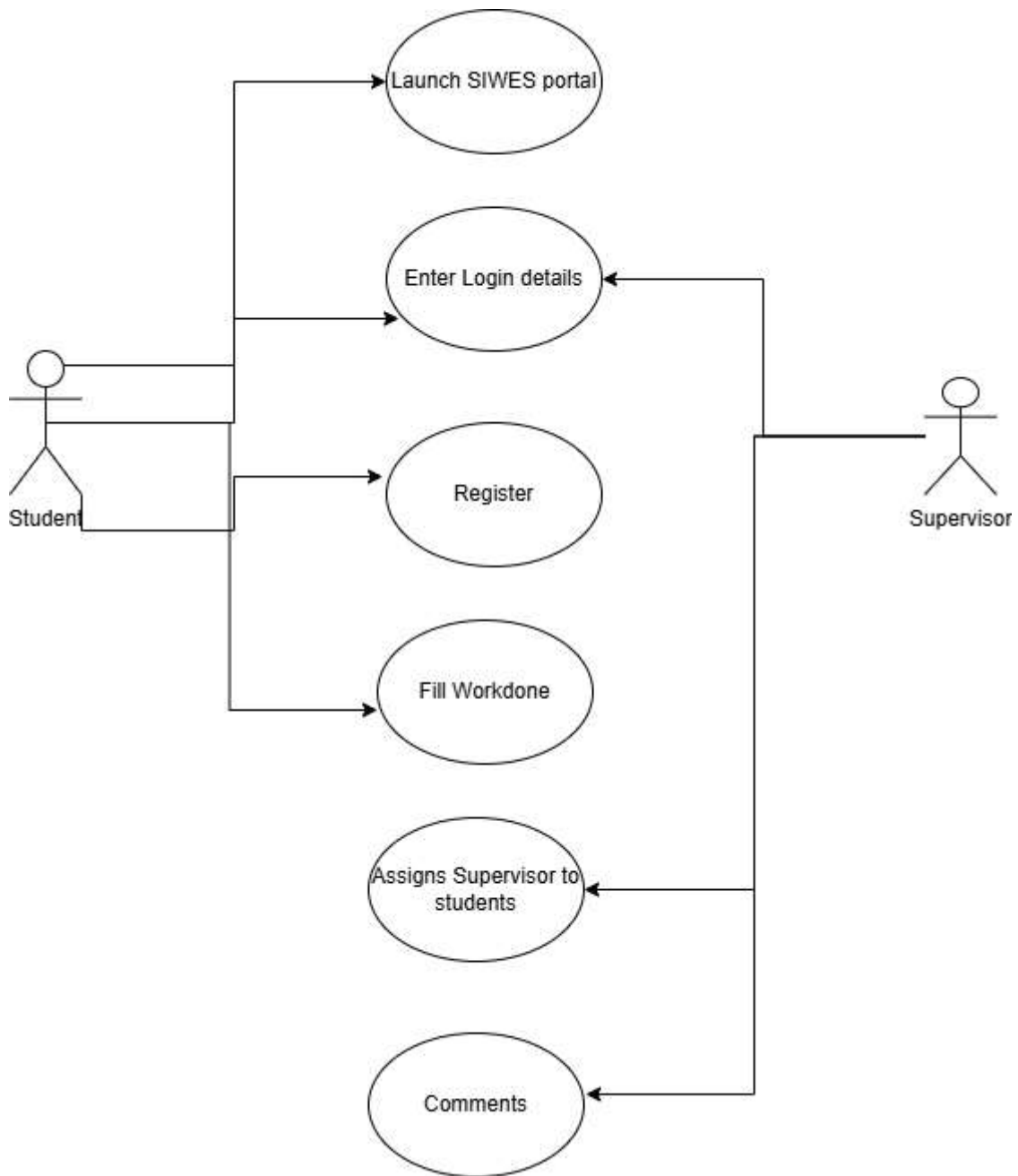


Figure 3.2 Use Case Design of the system

b) Sequence diagrams show the relationships between the objects participating in a given use case and they help to identify interaction between objects. Figure 3.3 shows the sequence diagram of the system.

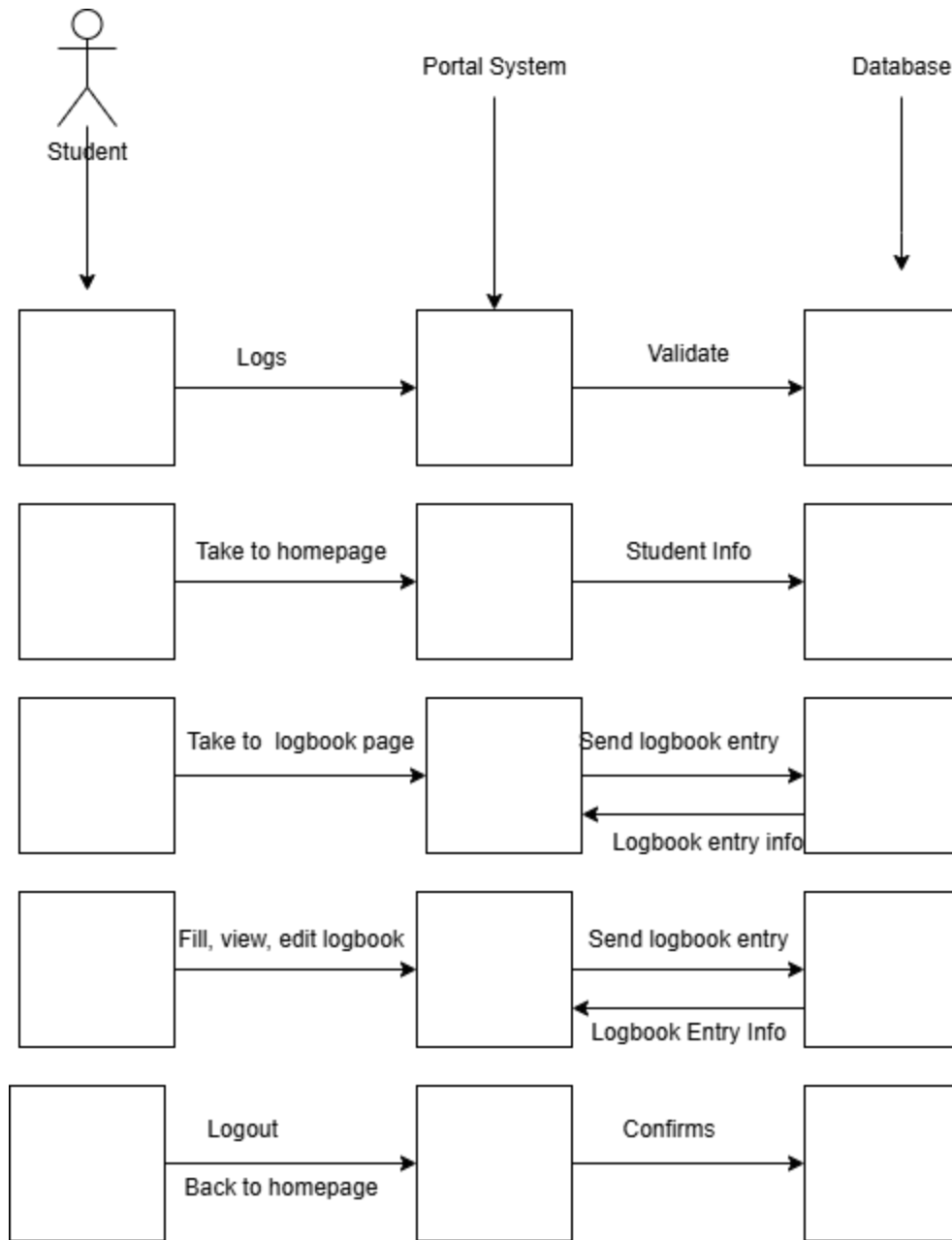


Figure 3.3 Sequence Diagram

c) The block diagram of a web-based SIWES (Student Industrial Work Experience Scheme) system is a simplified graphical representation that illustrates the major components (or modules) of the system and how they interact with each other. It provides a high-level,

abstract view of the system's architecture and visually breaks down the system into logical units. Figure 3.4 shows the block diagram of the system.

- Database: Central storage unit that holds all system data, including student records, logbook entries, supervisor comments, and placement information.
- Internet: The communication medium enabling prompt access and interaction between users (students, supervisors, admins) and the SIWES portal.
- SIWES Portal: The main web interface through which all user groups interact with the system.
- Home: The landing page or dashboard providing access links to various modules depending on the user role.
- Student: Represents the student user role with access to features like registration, logbook updates, and supervisor feedback.
- Admin: Represents system administrators who manage student data, assign supervisors, and oversee the platform's operations.
- Registration: A module where students register or log in to gain access to the system's services.
- Supervisor: Represents users who oversee students' SIWES progress, access logbooks, and provide comments.
- Add Workdone: A feature that allows students to input their daily or weekly tasks during the SIWES period.
- View Logbook: Enables both students and supervisors to access saved work entries.
- Give Comment: Allows supervisors to provide feedback on student performance and entries.

- SIWES Placement Details: Section where student industrial placement records are stored and managed.
- Upload Student Name: Admin feature for adding student details into the system manually.
- Assign Supervisor: Admin function for linking students to their respective supervisors.
- View Number of Students: Enables supervisors or admins to see how many students are under their supervision or within the system.

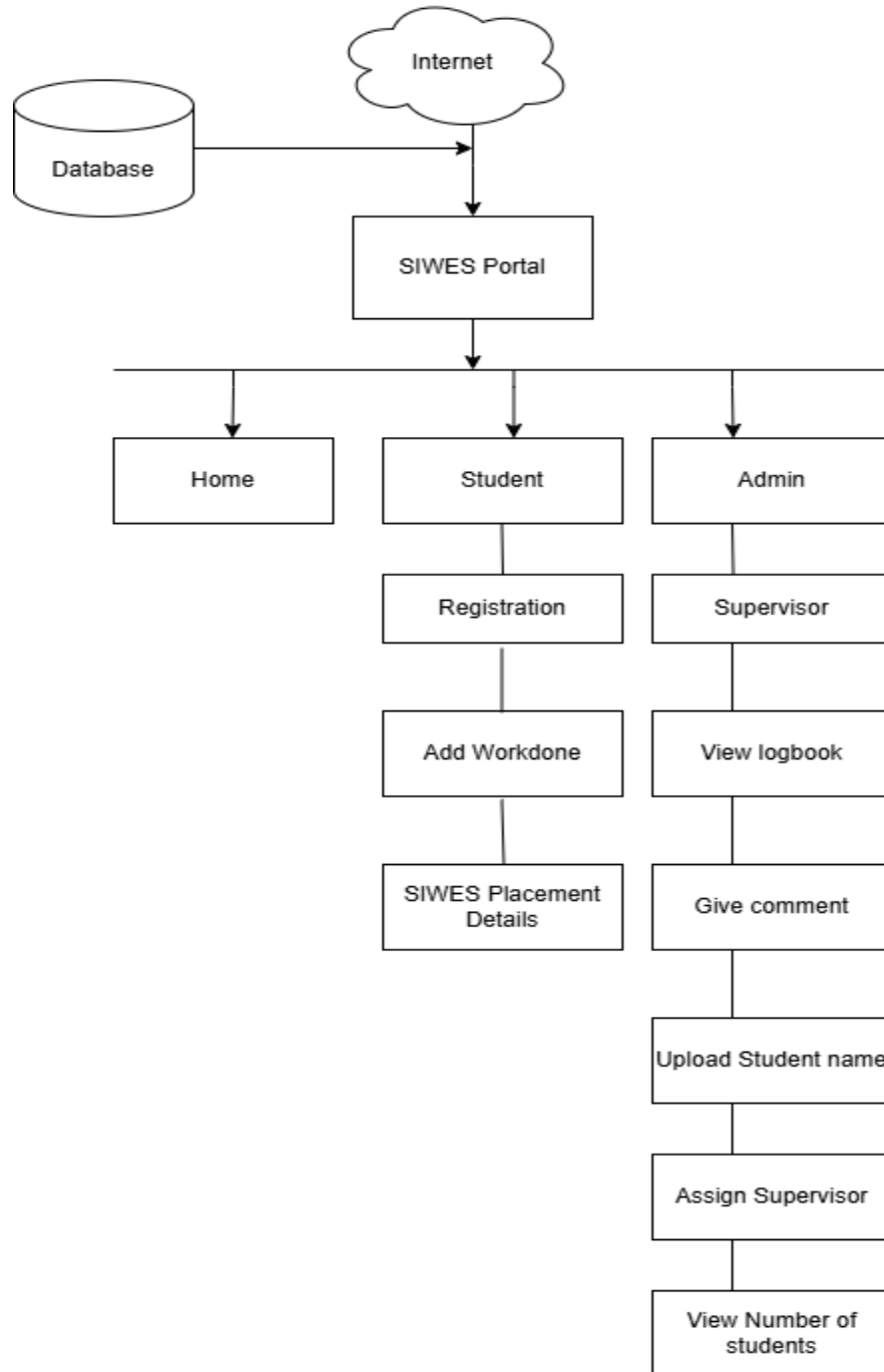


Figure 3.4 Block Diagram of the system

- f) Activity diagram is another important diagram in UML to describe dynamic aspects of the system. Activity diagram is basically a flow chart to represent the flow from one

activity to another. The activity can be described as an operation of the system, therefore the control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Figure 3.5 shows activity diagram of the system.

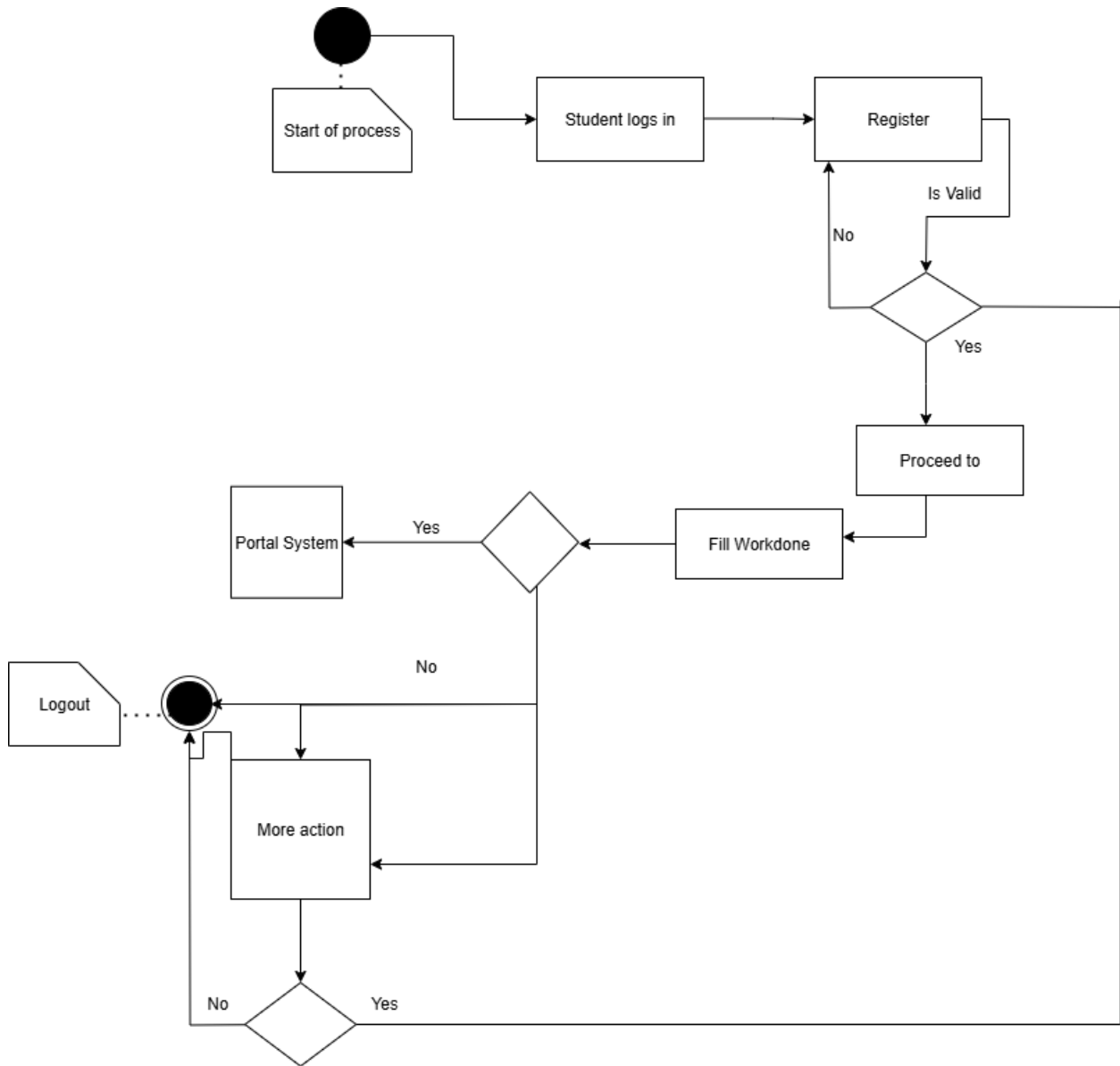


Figure 3.5 Activity Diagram of the system

### 3.4.2 Database design

The system utilizes a structured database that aligns with the demands of the algorithm while adhering to the principles of safe database development. It is meant to be implemented using MySQL stored procedures. The schemas will contain the signup registration file and organization details file. Databases are central to web portals. A database can hold almost any collection of information you may want to search and update, such as a user list or a list of various items. The database management system used in this work is MySQL which is a relational database. It is accessed using the graphical user interface provided by the phpMyadmin tool. The phpMyAdmin allows MySQL database to be administered through the web browser. There are 7 database tables which are User interface table, Internship table, logbook table, Report table and Feedback table.

a) User Interface Table: This part of the design deals with how users add information to the system and how information is presented back to them. Table 3.1 shows the User Interface table.

Table 3.1 User Interface Table

| Field Name   | Data Type | Size   | Description                    |
|--------------|-----------|--------|--------------------------------|
| user_id (PK) | INT       | 11     | Unique user ID                 |
| Name         | VARCHAR   | 30     | Full name of user              |
| Password     | VARCHAR   | 15     | Hashed password                |
| Role         | ENUM      | 1 byte | 'student','supervisor','admin' |

b) Internship Table: This table is intended to record daily or weekly activities during the SIWES program, along with the time spent on each task. It also includes a section for supervisor acknowledgment to ensure accuracy and accountability. Table 3.2 shows the internship table of the system.

Table 3.2 Internship Table

| Field Name         | Data Type | Size | Description                      |
|--------------------|-----------|------|----------------------------------|
| Internship_id (PK) | INT       | 11   | Unique internship record ID      |
| Student_id (FK)    | INT       | 11   | Foreign key to Users table       |
| Company            | VARCHAR   | 40   | Internship company name          |
| Duration           | VARCHAR   | 10   | Internship duration(e.g 6months) |
| supervisor_id      | INT       | 11   | Foreign key to Users table       |

c) A daily log that records tasks performed, time spent, and activities completed during the SIWES program and this will include supervisor comments. Table 3.3 below shows the logbook output of the system.

Table 3.3 Logbook Table

| Field Name      | Data Type | Size           | Description                          |
|-----------------|-----------|----------------|--------------------------------------|
| logbook_id (PK) | INT       | 11             | Unique logbook entry ID              |
| Student_id (FK) | INT       | 11             | Foreign key to Users table           |
| entry_date      | DATE      | Fixed(3 bytes) | Date of log entry                    |
| Content         | TEXT      | ~65,535 chars  | Student's daily/weekly logbook notes |

d) Report table: This table presents the key components of the SIWES project in an organized format, including details from the student and inputs from the supervisor. It offers a clear and concise summary of the student's work experience and the comments provided. Table 3.4 shows the report of the system.

Table 3.4 Report Table

| Field Name      | Data Type | Size           | Description                  |
|-----------------|-----------|----------------|------------------------------|
| report_id (PK)  | INT       | 11             | Unique logbook entry ID      |
| Student_id (FK) | INT       | 11             | Foreign key to Users table   |
| file_path       | VARCHAR   | 255            | Path to uploaded report file |
| submission_date | DATETIME  | Fixed(8 bytes) | Date and time                |

e) A feedback table that captures supervisor comments and suggestions, along with the commenter's name and the date of submission. It functions as a performance assessment tool designed to improve the quality of services or content provided during the SIWES program. Table 3.5 shows the feedback of the system.

Table 3.5 Feedback Table

| Field Name       | Data Type | Size | Description        |
|------------------|-----------|------|--------------------|
| feedback_id (PK) | INT       | 11   | Unique feedback ID |

|                    |          |                |                            |
|--------------------|----------|----------------|----------------------------|
| supervisor_id (FK) | INT      | 11             | Foreign key to Users table |
| Student_id (FK)    | INT      | 11             | Foreign key to Users table |
| Comments           | TEXT     | ~65,535 chars  | Feedback content           |
| Date               | DATETIME | Fixed(3 bytes) | Date and time of feedback  |

e) **Class Diagram** is a fundamental tool in object-oriented design and one of the most widely used UML diagrams. It provides a static "blueprint" of a system by illustrating its core building blocks—the classes—along with their properties (attributes), behaviors (functions), and the relationships they have with one another. While a single diagram can model a specific part of a system, a collection of class diagrams can represent the entire system architecture. Its primary use is to design and model the architecture of an object-oriented system before development begins. Figure 3.6 shows the class diagram of the system.

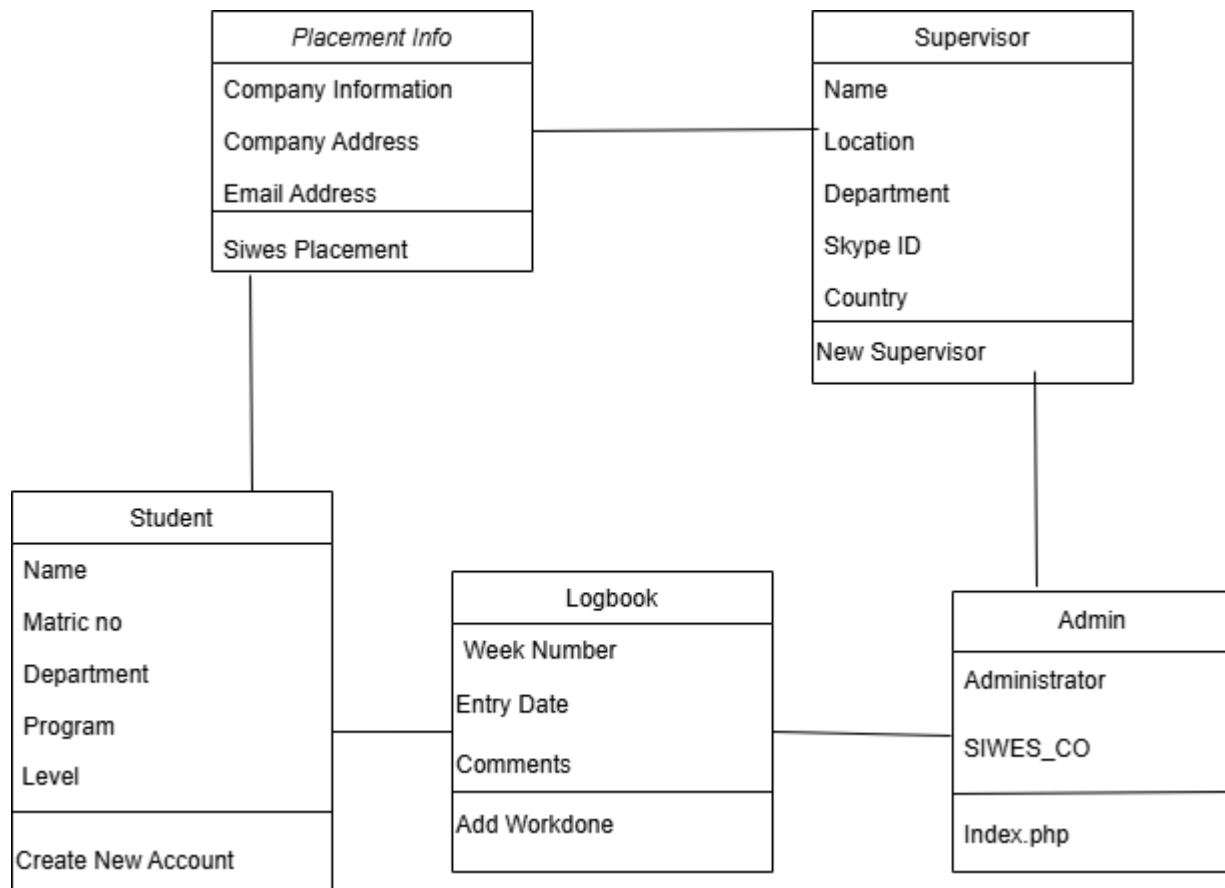


Figure 3.6 Class Diagram of the system

### 3.4.3 Input Design

Input design is a crucial aspect of system development. It involves determining how data should be captured, entered, and validated within the system to ensure accuracy, completeness, and consistency. The goal of input design is to make data entry as simple and error-free as possible, while ensuring that only relevant and valid information is submitted into the system.

## Student Information

---

**Matric No:**

**Password**

**Firstname**

**Surname**

**Middlename**

**Sex**

**Faculty**

**Department**

**Degree**

This section presents the personal and academic details of the student involved in the SIWES program. It includes the student's name, matric number, department, and institution. It confirms the student's eligibility and training duration. This helps identify and document the student's participation officially.

## Company Information

---

Name of Company/Establishment:

Address of Company/Establishment:

Select Country of Company/Establishment:

Select Allocated Supervisor:

Supervisor Phone No.:

Supervisor Skype ID:

My Skype ID:

This section outlines details about the organization where the industrial training took place. It covers the company's name, address, area of specialization, and assigned department. The name and role of the industry supervisor are also included. It provides context for the student's work environment and experience.

### 3.4.4 Output Design

Output design focuses on how the system presents processed data to users. The purpose is to provide meaningful, accurate, and timely information in a format that is easy to understand and utilize. Good output design improves decision-making and helps users

monitor the system’s functionality. In the Output design, several tables were used to represent system behavior and structure.

Several students from the Faculty of Computing and Applied Sciences took part in the SIWES program. The training promoted collaboration, knowledge exchange, and hands-on experience. This section below provides a list of students currently undergoing the industrial training program as illustrated in Figure 3.7.

THOMAS ADEWUMI UNIVERSITY, OKO

LIST OF SIWES STUDENTS

Faculty-----

| S/No. | Matric no   | First name | Surname | Middle name | Gender | Programme            | Level |
|-------|-------------|------------|---------|-------------|--------|----------------------|-------|
| 1     | 21/10MSS001 | Okoli      | Chike   | Abassi      | Female | Software Engineering | 200   |
| 2.    | 21/10MSS002 | Amaka      | Chike   | Abassi      | Female | Software Engineering | 200   |
| 3.    |             |            |         |             |        |                      |       |
|       |             |            |         |             |        |                      |       |
| 4.    |             |            |         |             |        |                      |       |

|    |                 |        |       |        |      |                         |     |
|----|-----------------|--------|-------|--------|------|-------------------------|-----|
|    |                 |        |       |        |      |                         |     |
| 5. |                 |        |       |        |      |                         |     |
|    |                 |        |       |        |      |                         |     |
| 6. | 21/10MSS0<br>08 | Winner | Chike | Bassey | Male | Software<br>Engineering | 100 |

Figure 3.7 List of SIWES students

Students from various department were placed in various organizations for their SIWES program. The placement offered opportunities for practical learning, teamwork, and knowledge sharing. It served as an avenue for students to apply classroom learning in real-world environments. Figure 3.8 below shows the SIWES Placement Details.

THOMAS ADEWUMI UNIVERSITY, OKO  
SIWES PLACEMENT DETAILS (2024/2025 Session)

Programme: -----

| S/N | Matric no    | Name         | Company            | Level |
|-----|--------------|--------------|--------------------|-------|
| 1.  | MSS/2021/001 | John Okoro   | Dangote Cement PLC | 300L  |
| 2.  | MSS/2021/002 | Aminat Bello | MTN Nigeria        | 400L  |
|     |              |              |                    |       |

|    |              |                    |                            |      |
|----|--------------|--------------------|----------------------------|------|
|    |              |                    |                            |      |
|    |              |                    |                            |      |
| 5. | MSS/2021/005 | Michael<br>Adeyemi | Innoson Vehicle Mfg.<br>CO | 300L |

Figure 3.8 SIWES Placement Details

This section provides the Statistical SIWES Report of students assigned to different organizations for their industrial training. The program offered meaningful hands-on experience, encouraged productive collaboration, and supported the development of professional competencies. It also created an avenue for applying academic knowledge in real-world industry settings. Figure 3.9 below shows the Statistical System SIWES Report.

THOMAS ADEWUMI UNIVERSITY, OKO

STATISTICAL SYSTEM SIWES REPORT

| S/N | State   | 300L Male | 300L<br>Female | 200L Male | 200L<br>Female | Total |
|-----|---------|-----------|----------------|-----------|----------------|-------|
| 1.  | Abia    | 13        | 12             | 9         | 9              | 43    |
| 2.  | Adamawa | 11        | 8              | 8         | 7              | 34    |

|     |         |   |   |   |   |    |
|-----|---------|---|---|---|---|----|
|     |         |   |   |   |   |    |
|     |         |   |   |   |   |    |
| 36. | Zamfara | 9 | 8 | 6 | 6 | 29 |
| 37. | FCT     |   |   |   |   |    |

Figure 3.9 Statistical System SIWES Report

This presents the Statistical SIWES Report of students who were assigned to various organizations for their industrial training. The program offered valuable practical experience, fostered effective collaboration, and contributed to the development of professional skills. It also served as a platform for applying academic knowledge within real-world industry environments.

### 3.5 System Implementation

The implementation phase of the Student Industrial Work Experience Scheme (SIWES) system marked the transition from system design to actual coding and integration. This stage involved translating the requirements and design models into a functional web-based application that automates and digitizes the SIWES process.

The system was developed using a combination of web technologies including HTML, CSS, JavaScript, and PHP, with MySQL employed as the backend database management system. These technologies were chosen for their compatibility, ease of integration, and ability to

support interactive and dynamic web applications. The WAMP (Windows, Apache, MySQL, PHP) environment was used as the local development and testing server before final deployment.

Following an iterative waterfall model, the development process was broken down into several phases such as planning, analysis, design, coding, testing, and maintenance.

During implementation, special attention was given to:

- User Interface Development: Ensuring ease of use and clarity across student, supervisor, and siwes director.
- Data Management: Securely storing and retrieving internship records, weekly logbook entries, and supervisor comments
- Authentication and Access Control: Role-based login system to prevent unauthorized access.

### **3.5.1 Hardware and Software support**

The hardware requirements are the set of component of the system which can be seen or felt. For efficient and effective functioning of the system, the following hardware specifications are recommended for the web server:

- ❖ Computer/Laptop
- ❖ Mobile Devices(Smartphones/Tablets)
- ❖ 8 G RAM (Random Access Memory) size

- ❖ Internet Access with high bandwidth

### Software Requirements for the SIWES System

The Software Requirement comprises of programs and data that make the hardware to carry out the specified task. The following software packages are required for the application to function.

- ❖ SQL (Structured Query Language) Server 2000 or later
- ❖ PHP 4.1 or later Software
- ❖ Web Server ( WAMP )
- ❖ Operating System (UNIX, Window, etc.)
- ❖ A reliable and up-to-date Antivirus Software
- ❖ An internet Connection

### **3.5.2 Programming Language**

The programming languages used in the development of the proposed system are Hypertext Preprocessor (PHP), Javascript(Js) and Cascading Style Sheets (CSS). PHP was used because it is a general purpose server side scripting language originally designed for web development to produce dynamic web pages. It has also evolved to include a command line interface capability and can be used in stand-alone graphical applications. The use of CSS (Cascading Style Sheets) offers a wide range of features and design capabilities that make it highly suitable for implementing the interface of this system. One of its key advantages is the

ability to create visually distinct and dynamic web pages with minimal coding effort. CSS allows for consistent styling across multiple pages while also enabling flexibility in layout and appearance.

In the development of the SIWES system, CSS was integrated alongside PHP, MySQL, Apache, and the WAMP server to establish a robust and cohesive development environment. Together, these technologies ensured a seamless combination of front-end design and back-end functionality, contributing to the overall performance and usability of the system.

These technologies enabled the creation of a dynamic, secure, and user-friendly application capable of managing complex data interactions and supporting seamless academic-industry collaboration. Their combined use reflects a strategic choice to leverage dependable, open-source tools for building efficient and scalable web-based SIWES system within the university.

### **3.5.3 Implementation Techniques**

In the development of the Web-Based Student Industrial Work Experience Scheme (SIWES) system, various implementation techniques were employed to ensure the system's reliability, efficiency, and ease of use. The approach adopted involved the integration of front-end and back-end technologies, a structured modular development process, and a local server environment for testing and refinement.

The following techniques were applied during implementation:

- i) Client-Server Model

The system was built on a client-server architecture, where users interact with the application via a web browser (client side), while the server handles requests, processes data, and communicates with the database. This separation allows for scalable, secure, and efficient system operation.

#### ii) Front-End Development

The interface design was carried out using HTML for structuring content, CSS for styling and layout, and JavaScript for implementing interactive features. This combination ensured a responsive and user-friendly interface across various user types—students, supervisors, and administrators.

#### iii) Back-End Implementation

The core functionalities and server-side logic were developed using PHP, a widely used scripting language suitable for dynamic web applications. PHP was utilized to manage user sessions, handle form submissions, and interact with the database.

#### iv) Database Management

The system's data was stored and managed using MySQL, a relational database management system. The database schema was designed to support student registrations, supervisor comments, logbook entries, and administrative oversight. SQL queries were written to support various data operations.

#### v) Local Development Environment

The WAMP stack (Windows, Apache, MySQL, PHP) was used to provide a stable and consistent local development and testing environment. This enabled efficient debugging, testing, and simulation before deployment.

vi) Modular Design Approach

The system was implemented in a modular fashion, with separate components handling tasks such as registration, logbook management, supervisor feedback, and administrative reports. This method enhances maintainability and supports future scalability.

vii) Form Validation and Security

Input validation and data sanitization techniques were incorporated to ensure data integrity and protect against vulnerabilities such as SQL injection and cross-site scripting. Validation occurred at both client and server levels.

viii) Iterative Waterfall Method

The development process followed the iterative waterfall model. The system was broken down into manageable modules, each implemented and tested independently. Feedback from each stage guided the refinement of subsequent phases.

### **3.5.4 System Development Tools and Techniques**

The development of the web-based SIWES system followed a structured software engineering process, combining both front-end and back-end technologies to deliver a responsive, scalable, and user-friendly application for students, supervisors and siwes

director. The development process was guided by the need to digitize and streamline the manual activities involved in managing industrial training.

The development of the web-based SIWES (Student Industrial Work Experience Scheme) system was carried out using a structured software engineering methodology, ensuring that each phase from requirement analysis to final deployment was thoroughly planned, implemented, and evaluated. The goal was to create a responsive, scalable, and user-friendly web application that serves three primary user groups: students, supervisors, and siwes director.

This structured process began with a comprehensive requirement analysis, where the existing manual SIWES workflow was studied in detail. My combined research methodologies helped identify key bottlenecks, such as delays in logbook submission, lack of centralized monitoring, and difficulty in supervisor comments. These findings guided the functional and non-functional specifications of the system.

I applied a structured design strategy that clearly separates the system's components to enhance organization and efficiency across the front-end (presentation layer), back-end (application logic), and database (data storage). The front-end was built using modern web technologies like HTML, CSS, Bootstrap, and JavaScript to ensure a clean, responsive user interface that adapts well to desktops and mobile devices. The back-end was developed using PHP, a widely used server-side scripting language, to manage authentication, business logic, and secure data handling. MySQL served as the relational database, designed to store student records, placement details, logbook entries, and evaluation reports in an organized and scalable manner.

The development process also emphasized security, performance, and usability. Security best practices such as password hashing, session control, and SQL injection prevention were implemented. Performance optimization was addressed through efficient database queries and user experience was prioritized with intuitive navigation, clear feedback messages, and role-based dashboards tailored to each user group's responsibilities.

By digitizing and automating critical tasks such as registration, supervisor assignment, logbook monitoring, and report submission, the system aimed to reduce administrative burden, enhance communication between students and supervisors, and provide oversight for supervisors. Overall, the system development approach ensured that the final product was not only technically sound but also aligned with the real-world needs of SIWES program management.

## **CHAPTER FOUR**

### **IMPLEMENTATION AND TESTING**

#### **4.1 Introduction**

This chapter presents a detailed account of the outcomes, observations, and experiences gathered during the Student Industrial Work Experience Scheme (SIWES). The results reflect the various tasks performed, projects undertaken, and knowledge acquired throughout the training period. The activities documented in this section demonstrate the application of theoretical knowledge to practical situations in a real-world work environment.

The chapter also discusses how the objectives of the SIWES program were met through hands-on experience, problem-solving, and exposure to industry-standard tools, technologies, and practices. The responsibilities assigned to the student, the methodologies used in carrying out tasks, and the level of supervision received are all evaluated and analyzed.

Furthermore, this chapter compares the student's academic knowledge with the practical skills acquired during the training. It also examines the challenges faced during the program and how they were addressed. The insights gained from the experience are critically discussed to highlight areas of growth, professional development, and relevance to the student's field of study.

#### **4.2 Results of System implementation**

The current implementation of Thomas Adewumi University SIWES portal is built for two stakeholders: IT Students and Supervisors. Users in the system can communicate with each other and access member information based on their classification. The implementation deals with the collection of interdependent physical devices, together with their programming, which provides functionality and performance for which the system was design. The implementation of this online

Thomas Adewumi University SIWES system software is made concise to make it friendly to user in terms of accessibility and availability.

The outcome of the implementation phase includes the system's source code, accompanied by relevant documentation to enhance readability and ease of maintenance. Software implementation must be evaluated not only based on its functional capabilities but also from a technical standpoint. Organizations operating with outdated systems may opt for newer, more efficient solutions with improved capacity and performance.

The SIWES system was implemented using a combination of PHP and MySQL for the core application logic and data management. For the front-end, HTML, CSS, and JavaScript were employed to create responsive and interactive browser-based interfaces. PHP was selected for its efficiency in handling server-side logic, while the WAMP server integrating Apache, MySQL, and PHP served as the development and deployment environment, enabling data storage and system integration.

This section presents the SIWES system's user interfaces along with the technical specifications and requirements necessary for its deployment and operation.

#### **4.2.1 Graphical User Interfaces**

##### Home Page

The Home Page Module in a web-based SIWES (Student Industrial Work Experience Scheme) system serves as the primary dashboard or landing page for users upon logging in. Its main purpose is to provide a quick, personalized overview of relevant information and quick access to key functionalities, depending on the user's assigned role. Figure 4.1 shows the Home Page

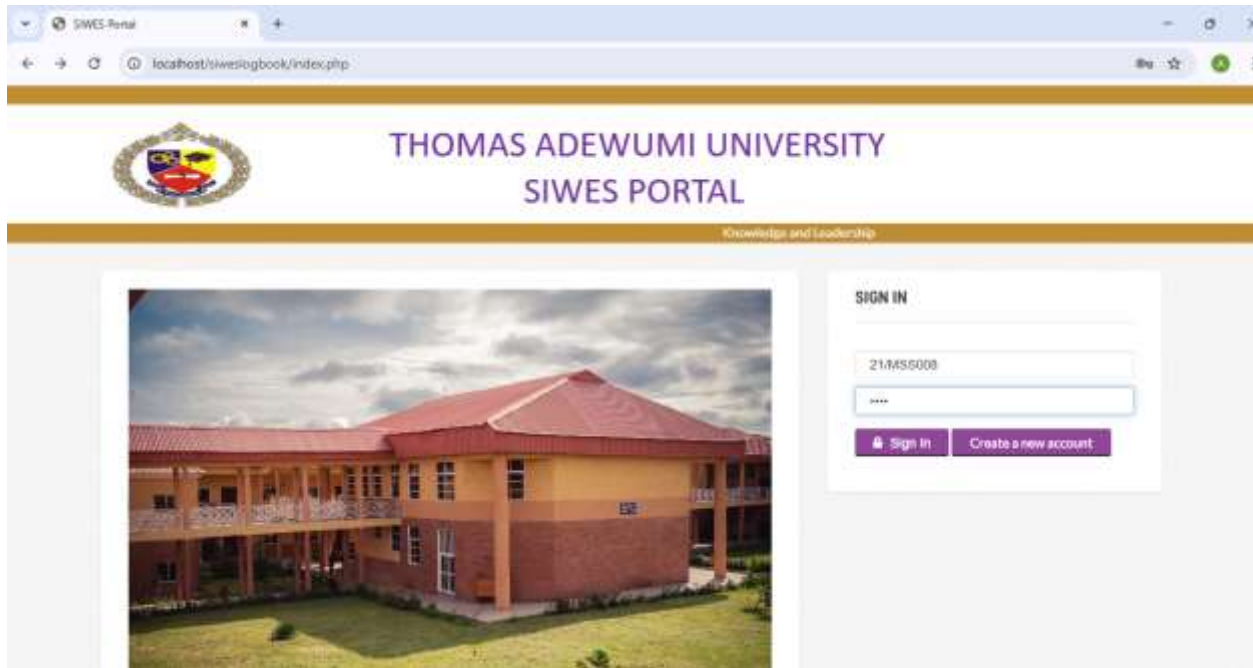


Figure 4.1: Home Page

## Logbook

The Logbook module enables students to document daily or weekly activities carried out during their SIWES training. It includes fields such as date, description of tasks, and supervisor comments. This module digitizes the traditional logbook, providing supervisors with a streamlined platform for document assessments with detailed comments. Figure 4.2 shows the Logbook Module

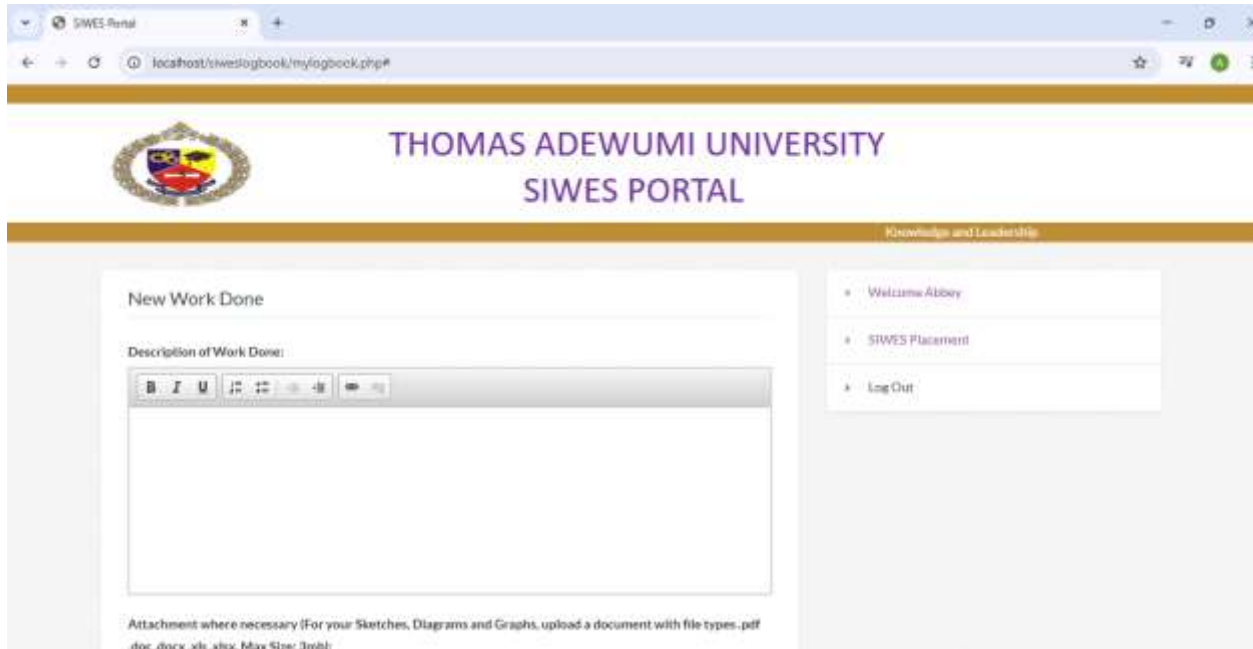


Figure 4.2: Logbook

### **SIWES Placement Details**

This program module enables students to enter and manage details related to their industrial placement. Essential information includes the organization's name and address, supervisor contact details, and the offer letter. These records support the institution in verifying and monitoring each student's internship and serve as the basis for logbook documentation and performance evaluation.

Figure 4.3 shows the SIWES Placement Details

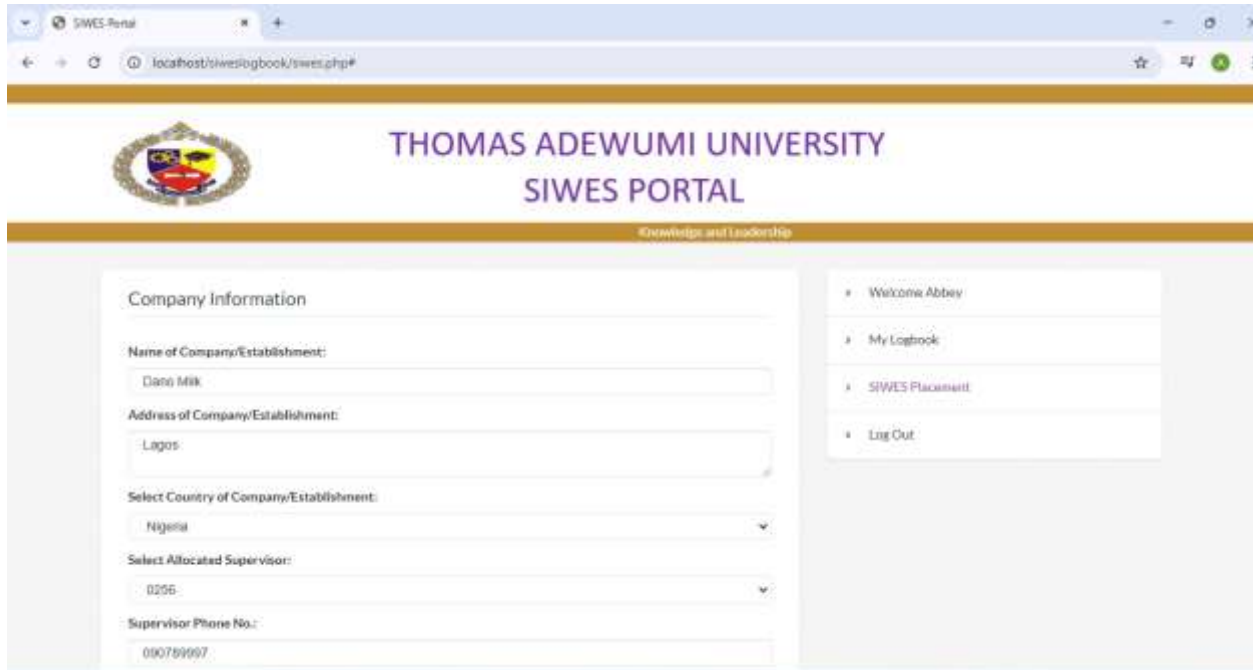


Figure 4.3: SIWES Placement Details

### **Supervisor Registration**

The registration process for supervisor is streamlined for accessibility and security. Supervisors create and verify their accounts, gaining access to a dedicated portal. This new access enables them to efficiently manage student logbooks and submit supervisor comments to ensure student progress within the SIWES system. Figure 4.4 shows the Supervisor Registration

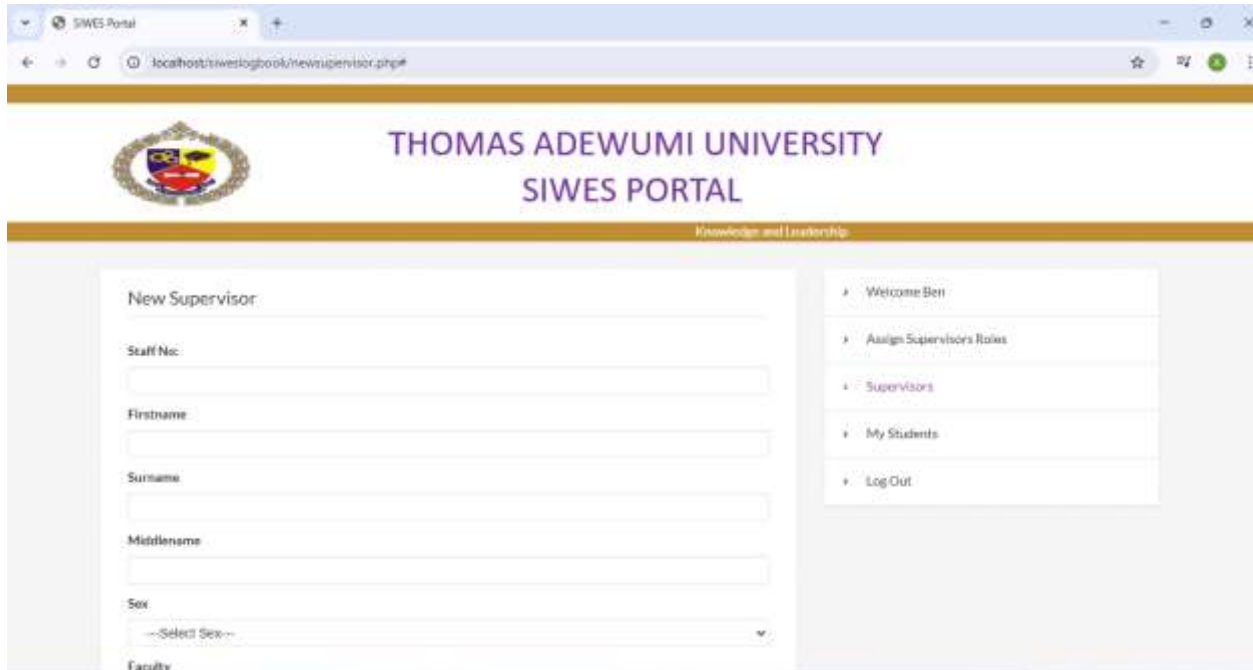


Figure 4.4: Supervisors Registration

### Assign Supervisors

Institution administrators use this feature to assign supervisors to students based on department or placement organization. The system presents a list of registered students and assigned supervisors.

Figure 4.5 shows the assign roles to supervisors

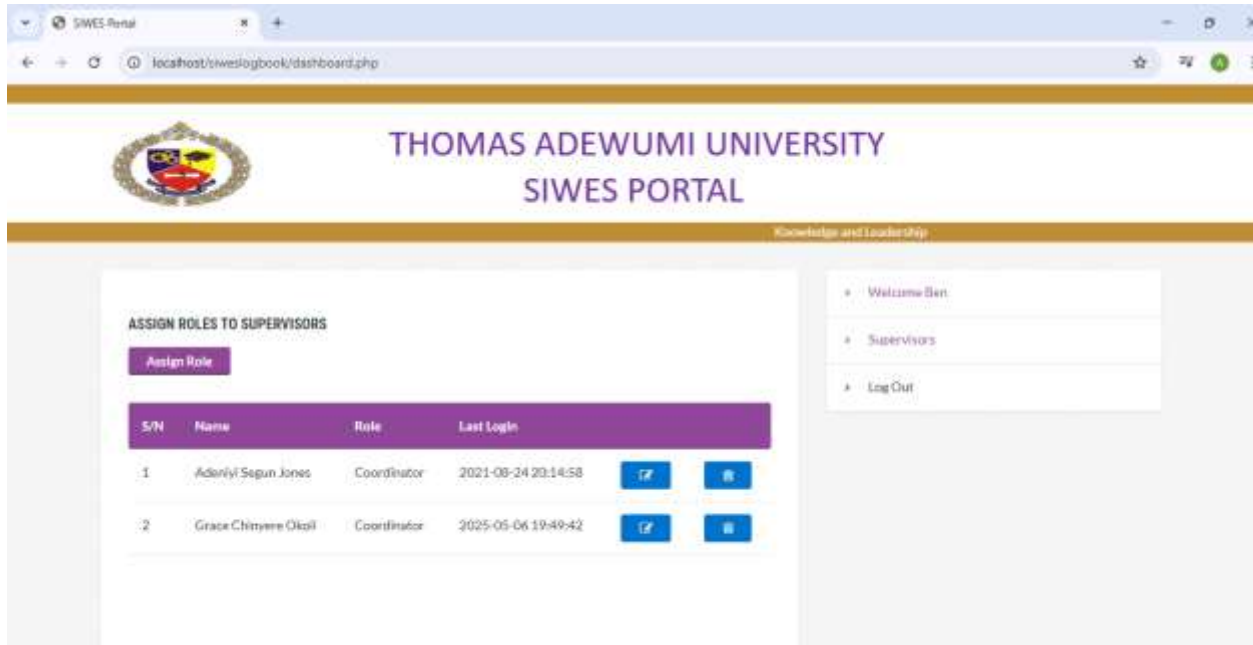


Figure 4.5: Assign Supervisors

### Assign Students

The supervisor dashboard serves as a centralized hub, presenting a complete roster of assigned students. It empowers supervisors to effortlessly oversee logbook submissions and manage

communication effectively. Figure 4.6 shows assign students of the supervisors

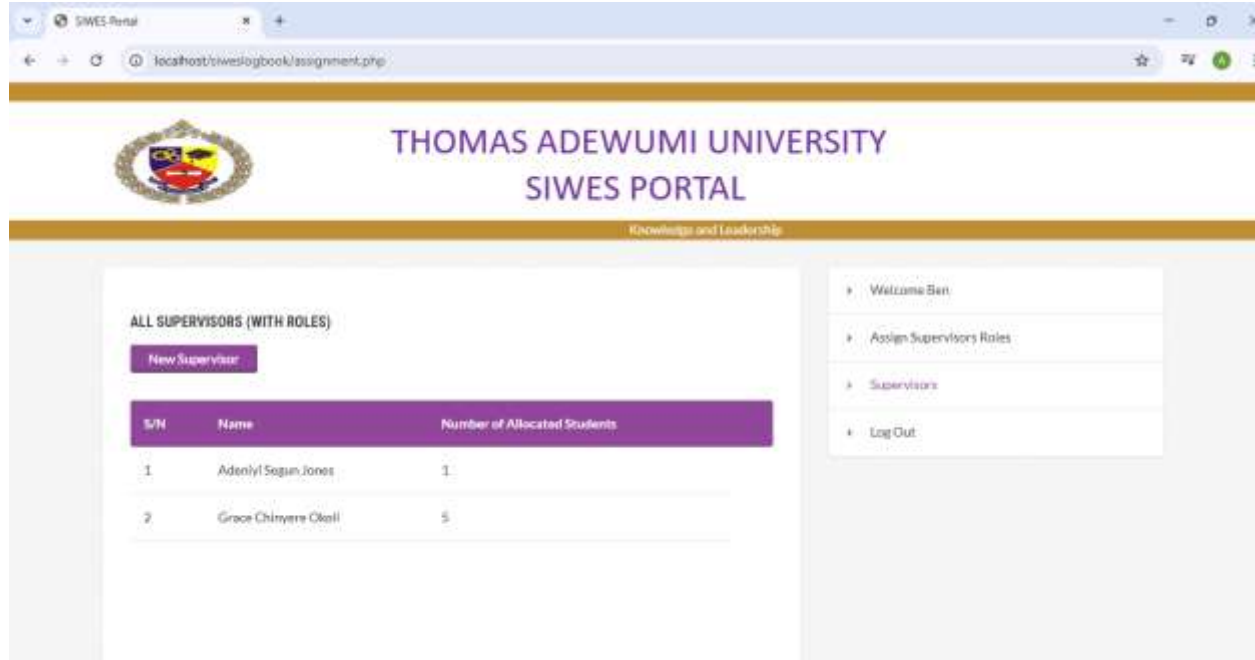


Figure 4.6: Assign Students

## Create Account

The Create Account module enables users, including students, supervisors, and institutional administrators to register on the platform. During the registration process, users provide necessary credentials such as full name, email address, password, role (student/supervisor/siwes director), and other relevant personal or institutional details. Secure authentication practices such as password encryption and email verification are employed to ensure account safety.

## Student Information

In a web-based SIWES (Student Industrial Work Experience Scheme) system, the "Student Information" module is a crucial component that stores and manages all relevant data pertaining to the students enrolled in the program. This information is essential for registration,

communication, and overall administration of their industrial attachment. Figure 4.7 shows the student information

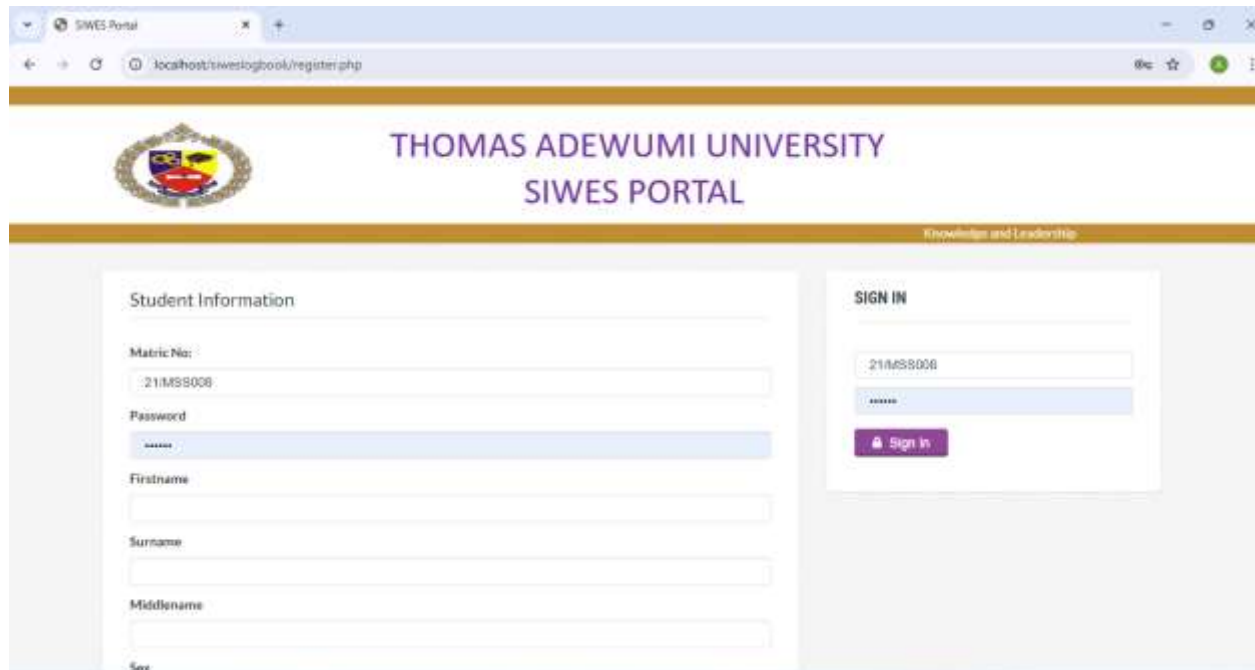
The image shows a web browser window displaying the registration page of the Thomas Adewumi University SIWES Portal. The browser's address bar shows the URL 'localhost/siweslogbook/register.php'. The page header features the university's logo on the left and the text 'THOMAS ADEWUMI UNIVERSITY SIWES PORTAL' in the center. Below the header, there is a navigation bar with the text 'Knowledge and Leadership'. The main content area is divided into two sections: 'Student Information' on the left and 'SIGN IN' on the right. The 'Student Information' section contains several input fields: 'Matric No:' with the value '21MS8008', 'Password' with a masked value '\*\*\*\*\*', 'Firstname', 'Surname', 'Middlename', and 'Sex'. The 'SIGN IN' section contains a 'Matric No:' field with the value '21MS8008', a 'Password' field with a masked value '\*\*\*\*\*', and a 'Sign In' button.

Figure 4.7: Student Information

#### 4.2.2 System Generated Reports

The system-generated report is an essential component of the developed application, delivering automated documentation of activities.

It addresses the limitations of manual reporting by ensuring greater accuracy, consistency, and efficiency.

Reports are produced promptly, providing stakeholders with timely access to relevant information.

They are clearly structured and easy to understand, supporting decision-making and record-keeping.

This feature promotes transparency, accountability, and effective system management.

THOMAS ADEWUMI UNIVERSITY

LIST OF SIWES STUDENTS (2024/2025 SESSION)

| S/N | Matric No   | Surname   | First Name | Middle Name | Gender | Programme            | Level |
|-----|-------------|-----------|------------|-------------|--------|----------------------|-------|
| 1   | 21/10MSS007 | Winner    | Elias      | Ayomiposi   | Male   | Software Engineering | 400   |
| 2   | 21/10MSS002 | Titilayo  | Oluwaseun  | Adenigba    | Female | Computer Science     | 400   |
| 3   | 22/11MSS004 | Afomiyomi | Samuel     | Adewale     | Male   | Software Engineering | 300   |
| 4   | 22/10MSS008 | Emerald   | Winner     | Santilo     | Male   | Software Engineering | 300   |
| 5   | 23/10MSS009 | Cynthia   | Ebuka      | Chinedu     | Female | Computer Science     | 400   |

Figure 4.8 List of SIWES Students.

A number of students from the Faculty of Computing and Applied Sciences participated in the SIWES program. The training encouraged teamwork, knowledge sharing, and practical experience. This section presents the list of students currently undergoing industrial training program. Figure 4.8 above shows the List of SIWES Students.

THOMAS ADEWUMI UNIVERSITY

STATISTICAL SIWES REPORT

| S/N | State     | 300L Male | 300L Female | 200L Male | 200L Female | Total |
|-----|-----------|-----------|-------------|-----------|-------------|-------|
| 1   | Abia      | 4         | 5           | 7         | 6           | 22    |
| 2   | Adamawa   | 2         | 5           | 3         | 7           | 17    |
| 3   | Akwa Ibom | 3         | 4           | 4         | 7           | 18    |
| 4   | Bauchi    | 2         | 2           | 3         | 2           | 9     |
| 5   | Abuja     | 10        | 9           | 11        | 5           | 35    |
| 6   | Lagos     | 12        | 5           | 1         | 15          | 43    |

Figure 4.9 Statistical SIWES Report.

This section provides the Statistical SIWES Report of students assigned to different organizations for their industrial training. The program offered meaningful hands-on experience, encouraged productive collaboration, and supported the development of professional competencies. It also created an avenue for applying academic knowledge in real-world industry settings. Figure 4.9 above shows the Statistical SIWES Report.

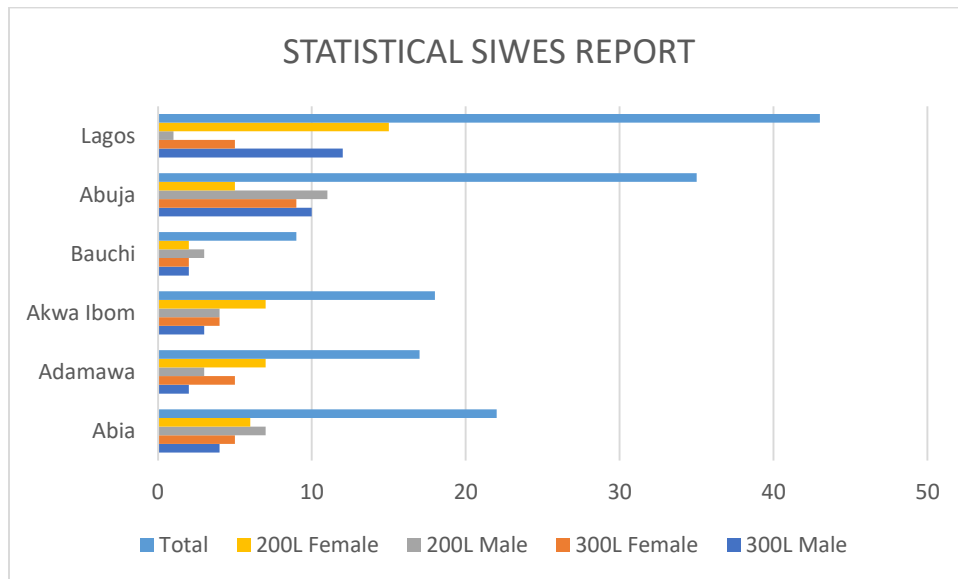


Figure 5.0 Statistical SIWES Report Barchart

The bar chart below illustrates the Statistical SIWES Report of students assigned to various organizations for their industrial training. It highlights the distribution of students across different organizations, reflecting the program’s role in providing practical experience, fostering collaboration, and enhancing professional skills. The chart also demonstrates how academic knowledge was applied within real-world industry environments. Figure 5.0 above shows the Statistical SIWES Report.

THOMAS ADEWUMI UNIVERSITY

SIWES PLACEMENT DETAILS

| <b>S/N</b> | <b>Matric No</b> | <b>Name</b>       | <b>Company</b> | <b>Level</b> |
|------------|------------------|-------------------|----------------|--------------|
| 1          | 21/10MSS007      | Adenigba Sunday   | MTN PLC        | 300          |
| 2          | 22/10MSS008      | Adeniyi Josephine | Binance PLC    | 300          |
| 3          | 22/11MSS004      | Winners Bassey    | Gamma PLC      | 200          |
| 4          | 23/10MSS003      | Sunshine Dami     | Gitlab PLC     | 200          |
| 5          | 23/10MSS009      | Augustina Michael | Indomie PLC    | 200          |

Figure 5.1 SIWES Placement Details

Students from different departments were deployed to various organizations for their SIWES program. The placement provided opportunities for hands-on learning, collaboration, and knowledge exchange. It also served as a platform for applying classroom knowledge in real-world industry settings. Figure 5.1 above shows the SIWES Placement Details.

#### **4.3 System Documentation**

This section describes the structure and operation of the system interacted with during the SIWES program. It includes details on how the system functions, its components, and how it supports the organization's objectives. The documentation covers system overview, requirements, design, key modules, database structure, user interface, and testing.

The system was developed to address specific organizational needs by automating tasks, improving data accuracy, and enhancing workflow efficiency. It consists of several modules, including user authentication, data entry, processing, and reporting. The database was designed using relational principles to ensure data integrity and ease of retrieval. Testing was conducted to ensure functionality, and the system met the desired specifications with minimal issues.

This documentation serves as a reference for future maintenance, upgrades, or further development.

### **4.3.1 System Deployment**

The deployment of the Thomas Adewumi University SIWES Management System entails configuring the application within a suitable hosting environment to ensure that end-users can conveniently access it via standard web browsers. The deployment process includes setting up the server, configuring the database, and conducting thorough testing to confirm accessibility and system responsiveness.

#### **Client-Side Requirements:**

- A modern web browser (e.g., Google Chrome, Mozilla Firefox, Microsoft Edge)
- A stable internet connection
- A device equipped with at least 4GB of RAM and a dual-core processor (for computer or PC usage)

#### **Server-Side Requirements:**

- A web server (e.g., Apache)
- Backend runtime environment (e.g., PHP, CSS, and JavaScript)
- A database server (e.g., MySQL)
- A registered domain name and an SSL certificate for secure access

Upon successful deployment, key users including students, supervisors, and the SIWES director can securely log in and carry out their respective responsibilities through the system's web-based interface, without the need for complex installations.

### **4.3.2 Operating the system**

#### **Steps for Key User Operations:**

##### **For Students:**

1. Register and log in.
2. Complete SIWES placement info.
3. Enter weekly logbook reports.

##### **For Supervisors:**

1. Register and log in
2. Log in using credentials.
3. View assigned students.
4. Review and comment on logbooks.

##### **SIWES Director**

1. Register students/supervisors.
2. Assign supervisors to students.
3. Monitor system-wide activity.

### **4.3.3 Maintaining the system**

System maintenance is essential to ensure the continued functionality, reliability, and security of the web-based SIWES platform. Maintenance activities involve regular updates to fix bugs, improve performance, and incorporate user feedback. This includes monitoring the system for

errors, optimizing database queries, and updating software components as needed. Security patches must be applied promptly to protect against vulnerabilities, while backups should be performed regularly to prevent data loss. User support and documentation updates are also part of ongoing maintenance to ensure smooth operation and user satisfaction. Effective maintenance ensures the system remains scalable, adaptable to institutional changes, and capable of handling future enhancements.

#### **4.4 Miscellaneous information of the system**

The web-based SIWES system is equipped with various supplementary features that contribute to its overall efficiency, usability, and adaptability across institutions. The system is designed to be compatible with major web browsers such as Chrome, Firefox, and Edge, and it supports both desktop and mobile access to enhance user flexibility.

It incorporates clearly defined user roles students, supervisors, and siwes director each with specific access privileges and functions. This role-based access control ensures that users only interact with features relevant to their responsibilities, enhancing security and system integrity.

Scalability is a key aspect of the system's design, allowing it to accommodate increasing user numbers and evolving institutional requirements without compromising performance. The user interface is intuitive and user-friendly, supporting efficient navigation and task execution regardless of technical proficiency.

Security is further strengthened through session management features such as login authentication, session timeout, and logout controls. User guidance is supported through the operating system manual, ensuring ease of use.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### **Summary**

The developed SIWES management system is designed as an improvement over the conventional paper-based logbook, addressing its key limitations. The system incorporates additional features that enhance the learning and monitoring experience for students undergoing industrial training. Through a study of existing systems aimed at solving similar challenges, a solution was developed that aligns with the structure and requirements of the Nigerian educational system. A review of relevant literature on electronic logbooks also informed the system's design. The designed system is implemented using web technologies such as HTML, CSS, JavaScript, PHP, and MySQL, ensuring functionality, scalability, and ease of use. A comprehensive presentation of the system's reports is provided in Chapter 4.

#### **Conclusion**

The development of the Thomas Adewumi University SIWES management system has provided a practical solution for improving the coordination and administration of industrial training activities. The system simplifies processes such as student placement, supervisor allocation, report submission, and supervisor comment, thereby reducing manual workload and ensuring better record management.

This project has demonstrated how web technologies can be effectively applied to address real-world administrative challenges in education. The system is user-friendly, scalable, and enhances communication between students, and the university. Overall, the successful implementation of

this system marks a significant step toward digitizing SIWES operations and improving efficiency for all stakeholders involved.

### **Recommendation**

The creation of any software is a continuous process, since difficulties will inevitably arise as humans progress. Because efficient results can only be reached if the logbook is used effectively and modified as needed, it is important to provide suggestions that will guide both computer users and administrators.

1. It is suggested that the system be adopted since it will save cost and boost the learning experience of interns
2. The system may be upgraded to suit other needs of the university community, especially as it regards internship

## REFERENCES

- Daniel & Adebola "A Mobile Students' Industrial Work Experience Scheme Logbook Application." (2020) Journal of Computer Sciences and Applications, vol. 8, no. 1
- Isibor & Okara Vocational and Technical Education Journal(VOTEJ) 2020 Vol 2, no. 1
- Ismail Siti Adura Faridah I. Industrial Training Programme Management System.2017
- Onihunwa "J. Innovative Info. Systems & Tech. Res." 2020 Journal of Computer Sciences and Applications
- Adetiba, E., Victor, M. O., Egunjobi, V. O., & Oladije, A. T. (2012). Development of e-SIWES Portal: A web based Platform for Student Industrial Work Experience Scheme (SIWES) Management. International Journal of Applied Information System. Vol.3 - No.8 , 10 - 17.
- A. B. Collins, "Gateway to the real world, industrial training: dilemmas and problems," Ankara, 2000
- Baxter, G., & Sommerville, I. (2011). Socio-technical systems: From design methods to systems engineering. Interacting with Computers, 23(1), 4-17.
- Babalola, G. O., Adeyemo, O. A., & B., A. L. (2015). Leveraging On Web-Based Technology For The Management of Students on SIWES Programme In Higher Educational Institutions (HEIs): A Case Study of Afe Babalola University. International Journal of Advanced Research. Vol.3 Issue 8 .
- Babangida Zachariah et al, International Journal of Advanced Research in Computer Science, 7 (2), March- April, 2016,1-8
- Chijioke F. Ugwuanyi , Jonas U. Ezema (2014): "Challenges of Industrial Training on the Performance of Business Education Graduates".

Ele Sylvester I et al., Sch. J. Eng. Tech., Mar 2017; 5(3):104-11

Laird, R. J., & Turner, C. R. (2008b, October). Interactive Web-based Placement Management –Principles and Practice using OPUS. Paper presented at ACEN-WACE Conference, Sydney, Australia.

Latour, B. (2005). Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford University Press

Mikael B (2008): Usability Study of Shift Logbooks In Physics Experiments at CERN. A master's thesis presented at HELSINKI UNIVERSITY OF TECHNOLOGY Department of Electrical and Communications Engineering, Telecommunications Software and Multimedia Laboratory.

Ogbuanya, T. C., Njoku, C. A., Kemi, P. O., & Ogunkelu, M. O., ' Evaluating the effectiveness of Students Industrial Work Experience Scheme (SIWES) programme to ensure quality of technical, vocational education and training in technical colleges in Lagos State. Vocational and Technical Education, Vol. 7, Issue 10, 2018, pp 61–69. <https://doi.org/10.5897/IJVTE2018.0256>

Oladimeji, A. O., Lawson, O. S., Olajide, O. G., & Akinfiresoye, W. A., 'Students ' Industrial Work Experience Scheme ( SIWES ), Rufus Giwa Polytechnic Experience , Prospects , Challenges And Improvement', Journal of Multidisciplinary Engineering Science Studies (JMESS), Vol. 4, Issue 3, 2017, pp 2458–2925. [www.jmess.org](http://www.jmess.org)

R. Akerejola, "Information for Student's Industrial Work Experience Scheme," 2004.

UNILAG. (2015). University of Lagos SIWES Portal. Retrieved 01 11, 2016, from UNILAG SIWES Portal: <http://www.unilag.edu.ng/unilagsiwes>

UNIOSUN. (2015). Osun State University, Osogbo. Retrieved 03 15, 2016, from SIWES Portal:

<http://siwes.uniosun.edu.ng/returning>

UNIZIK. (2014). Nnamdi Azikiwe University. Retrieved 02 17, 2016, from SIWES Portal:

<http://uniziksiwes.com>

UNILORIN. (2016). University of Ilorin SIWES Portal. Retrieved 03 18, 2016, from SIWES:

<http://www.siwes.unilorin.edu.ng>

## APPENDIX (SIWES page)

```
<?php
```

```
include_once("includes/session.php");  
include_once("includes/zz.php");  
include_once("includes/functions.php");  
include_once("models/studentinfo.php");
```

```
confirm_logged_in();
```

```
$getcountry = "SELECT * FROM countries";  
$thecountry = mysql_query($getcountry);
```

```
$getstate = "SELECT * FROM states";  
$thestate = mysql_query($getstate);
```

```
$getstaff = "SELECT * FROM stafflist";  
$thestaff = mysql_query($getstaff);
```

```
$getpost = "SELECT * FROM siwespost WHERE siwesMat = '$matno' ORDER BY  
siwesPostId DESC LIMIT 1";
```

```
$thepost = mysql_query($getpost);
```

```
if($thepost)
```

```
{
```

```
    $postrow = mysql_fetch_array($thepost);
```

```
}else{
```

```
    $postrow['siwesCompName'] = "";
```

```
    $postrow['siwesCompAdd'] = "";
```

```
    $postrow['siwesCompCountry'] = "";
```

```
    $postrow['siwesCompState'] = "";
```

```

        $postrow['siwesOfficer'] = "";
    }
?>
<?php require('views/header.php'); ?>

<div id="page-content">
    <div class="container">
        <div class="row">
            <div class="col-sm-8 page-content">
                <div class="white-container mb0">
                    <form method='post' action="models/siwesposting.php" enctype='multipart/form-
data'>
                        <fieldset>
                            <legend>Company Information</legend>
                            <div id='thegentable'>
                                <label>
                                    Name of Company/Establishment:
                                </label>
                                    <input type="text" name="siwesCompName" value='<?php echo
$postrow['siwesCompName'];?>' disabled>
                                <label>
                                    Address of Company/Establishment:
                                </label>
                                    <textarea name="siwesCompAdd" disabled><?php echo
$postrow['siwesCompAdd'];?></textarea>
                                <label>
                                    Country of Company/Establishment:
                                </label>
                                    <input type="text" name="siwesCompCountry" value='<?php echo
$postrow['siwesCompCountry'];?>' disabled>
                                <?php if($postrow['siwesCompState'] != "): ?>

```

```

<label>
    State of Company/Establishment:
</label>
    <input type="text" name="siwesCompState" value='<?php echo
$postrow['siwesCompState'];?>' disabled>
<?php endif; ?>
<label>
    Supervisor Name:
</label>
    <input type="text" name="siwesSupervisor" value='<?php echo
$postrow['siwesSupervisor'];?>' disabled>
<label>
    Supervisor Phone No.:
</label>
    <input type="number" name="siwesSupervisorNo" value='<?php echo
$postrow['siwesSupervisorNo'];?>' disabled>
<label>
    Supervisor Skype ID:
</label>
    <input type="text" name="siwesSupervisorSkype" value='<?php echo
$postrow['siwesSupervisorSkype'];?>' disabled><label>
    My Skype ID:
</label>
    <input type="text" name="siwesStudentSkype" value='<?php echo
$postrow['siwesStudentSkype'];?>' disabled>
    <?php if($postrow['siwesCompLetter'] != "): ?>
        <a href='models/downloadletter.php?letter=<?php echo
$postrow['siwesCompLetter'];?>' class="btn btn-default mt20 mb20" >Download Offer
Letter</a>
    <?php endif; ?>
    <?php if($postrow['siwesCompLetter'] == "): ?>
<label>No Offer Letter Added.</label>

```

```

        <?php endif; ?>
        <br>
        <a href="#" id='shownew' class="btn btn-default">Edit</a>
    </div>
    <div id='thenew'>
        <label>
            Name of Company/Establishment:
        </label>
        <input type="text" name="siwesCompName" value='<?php echo
$postrow['siwesCompName'];?>' required>
        <label>
            Address of Company/Establishment:
        </label>
        <textarea name="siwesCompAdd" required><?php echo
$postrow['siwesCompAdd'];?></textarea>
        <label>
            Select Country of Company/Establishment:
        </label>
        <select id="thecountry" name="siwesCompCountry" >
            <option selected value="<?php echo
$postrow['siwesCompCountry'];?>"><?php echo $postrow['siwesCompCountry'];?></option>
            <?php
                while($countryrow = mysql_fetch_array($thecountry))
                {
                    ?>
                    <option value="<?php echo $countryrow['countryname']; ?>"><?php
echo $countryrow['countryname']; ?></option>
                <?php
                }
            ?>
        </select>
    </div>

```

```

<div id="thestate">
  <label>
    Select State of Company/Establishment:
  </label>
  <select name="siwesCompState" >
    <option selected value="<?php echo
$postrow['siwesCompState'];?>"><?php echo $postrow['siwesCompState'];?></option>
    <?php
      while($staterow = mysql_fetch_array($thestate))
      {
        ?>
        <option value="<?php echo $staterow['statename']; ?>"><?php echo
$staterow['statename']; ?></option>
      <?php
      }
    ?>
  </select>
</div>

```

```

<label>
  Select Allocated Supervisor:
</label>
  <select required id="thesupervisorsname" name="siwesSupervisor"
onchange="document.getElementById('supName').value=this.options[this.selectedIndex].text" >
    <option selected value="<?php echo $postrow['siwesOfficer'];?>"><?php
echo $postrow['siwesOfficer'];?></option>
    <?php
      while($supervisorrow = mysql_fetch_array($thestaff))
      {
        ?>

```

```

        <option value="<?php echo $supervisorrow['staffno']; ?>"><?php echo
$supervisorrow['fname']. " ".$supervisorrow['sname']; ?></option>
        <?php
        }
        ?>
</select>
<input type="hidden" name="supName" id="supName" value="" />

<label>
        Supervisor Phone No.:
</label>

        <input type="number" name="siwesSupervisorNo" value='<?php echo
$postrow['siwesSupervisorNo'];?>' required>
<label>
        Supervisor Skype ID:
</label>

        <input type="text" name="siwesSupervisorSkype" value='<?php echo
$postrow['siwesSupervisorSkype'];?>'><label>
        My Skype ID:
</label>

        <input type="text" name="siwesStudentSkype" value='<?php echo
$postrow['siwesStudentSkype'];?>'>
<?php if($postrow['siwesCompLetter'] != ""): ?>
<label>
        Change Offer Letter <span class='bred'>(Max Size: 3MB for file types
.pdf .doc .docx)</span>
</label>
<?php endif; ?>
<?php if($postrow['siwesCompLetter'] == ""): ?>
<label>
        Attach Offer Letter <span class='bred'>(Max Size: 3MB for file types
.pdf .doc .docx)</span>

```

```

        </label>
        <?php endif; ?>
        <input type="file" name="siwesCompLetter">
        <br>
        <input type="submit" name="submit" class="btn btn-default" value='Save'>
<a href="#" id='hiddenew' class="btn btn-primary" >Cancel</a>
    </div>
</fieldset>
</form>
</div>
</div>

<div class="col-sm-4 page-sidebar">
    <aside>
        <div class="widget sidebar-widget white-container links-widget">
            <ul>
                <li><a href="#">Welcome <?php echo ucwords($fname);?></a></li>
                <li><a href="mylogbook.php">My Logbook</a></li>
                <li class="active"><a href="siwes.php">SIWES Placement</a></li>
                <li><a href="models/logout.php">Log Out</a></li>
            </ul>
        </div>
    </aside>
</div>
</div> <!-- end .container -->
</div> <!-- end #page-content -->

<?php require('views/footer.php'); ?>

```

**APPENDIX**(Student Page)

```

<?php
    include_once("includes/session.php");
    include_once("includes/zz.php");
    include_once("includes/functions.php");

    confirm_adminlogged_in();

    //$supervisor = $_SESSION['supervisor'];
    $supervisor = $_SESSION['staffno'];

    $getstdnts = "SELECT * FROM reglist INNER JOIN siwespost ON reglist.matno =
    siwespost.siwesMat WHERE siwesOfficer = '$supervisor'";
    $thestdnts = mysql_query($getstdnts);

    $getmystdnts = "SELECT * FROM reglist INNER JOIN siwespost ON reglist.matno =
    siwespost.siwesMat WHERE siwesOfficer = ''";
    $themystdnts = mysql_query($getmystdnts);

    $getstaff = "SELECT * FROM stafflist WHERE staffno = '$supervisor'";
    $thestaff = mysql_query($getstaff);

    $serial = 1;
    $inc = 1;
?>
<?php require('views/header.php'); ?>

<div id="page-content">
    <div class="container">
        <div class="row">
            <div class="col-sm-8 page-content">

```

```

<div class="white-container mb40">
  <div id='thegentable' class='pb90'>
    <?php while($staffrow = mysql_fetch_array($thestaff)){ ?>
      <h6>All Students of <?php echo ucwords($staffrow['sname']);?> <?php echo
ucwords($staffrow['fname']);?> <?php echo ucwords($staffrow['mname']);?></h6>
      <?php } ?>
      <?php if($_SESSION['adminroleid'] == 1):?>
      <a href="#" id='shownew' class="btn btn-default">Add Student</a>
      <?php endif; ?>

      <?php if(mysql_num_rows($thestdnts) < 1) { ?>
      <p class='pt20 mb90 pb210'>No Student added yet.</p>
      <?php }else{ ?>
      <table class="table-hover">
        <thead>
          <tr>
            <th>S/N</th>
            <th>Matric</th>
            <th>Name</th>
            <th>Program</th>
            <th>Level</th>
            <th></th>
            <?php if($_SESSION['adminroleid'] == 1):?>
            <th></th>
            <?php endif; ?>
          </tr>
        </thead>

        <tbody>
          <?php while($stdntrow = mysql_fetch_array($thestdnts)){ ?>

```

```

<tr>
  <td><?php echo $serial;?></td>
  <td><?php echo $stdntrow['matno'];?></td>
  <td><?php echo ucwords($stdntrow['sname']);?> <?php echo
ucwords($stdntrow['fname']);?> <?php echo ucwords($stdntrow['mname']);?></td>
  <td><?php echo ucwords($stdntrow['program']);?></td>
  <td><?php echo $stdntrow['level'];?></td>
  <td><a href="workdone.php?ad=<?php echo $stdntrow['siwesMat'];?>"
class='btn btn-primary'>View Work Done</a></td>
  <?php if($_SESSION['adminroleid'] == 1):?>
    <th><a href="models/deletestudent.php?ad=<?php echo
$stdntrow['siwesMat'];?>" class='btn btn-primary fa fa-trash-o' title='Delete'></a></td></th>
  <?php endif; ?>
</tr>
<?php $serial = $serial + $inc; ?>
<?php } ?>
</tbody>
</table>
<?php } ?>
</div>
<div id='thenew' class='pb60 mb60'>
  <form method='post' action="models/newstudent.php" class='pb50'>
    <fieldset>
      <legend>New Student</legend>
      <?php if(mysql_num_rows($themystdnts) < 1) {?>
        <p>All students have been assigned a supervisor.</p>
      <?php }else{ ?>
        <label>
          Student Name:
        </label>
        <select name='stdntmatno' required>

```

```

        <option disabled selected>---Select Student Name---</option>
        <?php while($mystdntsrow = mysql_fetch_array($themystdnts)){
?>
            <option value='<?php echo $mystdntsrow['matno'];?>'><?php echo
ucwords($mystdntsrow['sname']);?> <?php echo ucwords($mystdntsrow['fname']);?> <?php echo
ucwords($mystdntsrow['mname']);?></option>
            <?php } ?>
        </select>
        <br>
        <input type="submit" name="submit" class="btn btn-default"
value='Save'>
        <?php } ?>
        <a href="#" id='hidenew' class="btn btn-primary" >Cancel</a>
    </fieldset>
</form>
</div>
</div>
</div>
</div>
<div class="col-sm-4 page-sidebar">
    <aside>
        <div class="widget sidebar-widget white-container links-widget">
            <ul>
                <?php if($_SESSION['adminroleid'] == 1){ ?>
                <li><a href="#">Welcome <?php echo $_SESSION['fname'];?></a></li>
                <?php }else{ ?>
                <li class="active"><a href="#">Welcome <?php echo
$_SESSION['fname'];?></a></li>
                <?php } ?>
                <?php if($_SESSION['adminroleid'] == 1){ ?>
                <li><a href="dashboard.php">Assign Supervisors Roles</a></li>

```

```

        <?php if($_SESSION['supervisor'] != $_SESSION['staffno']){?>
        <li class="active"><a href="assignment.php">Supervisors</a></li>
        <?php }else{ ?>
        <li><a href="assignment.php">Supervisors</a></li>
        <?php } ?>
        <?php if($_SESSION['supervisor'] != $_SESSION['staffno']){?>
        <li><a href="models/mystudentview.php">My Students</a></li>
        <?php }else{ ?>
                <!--<li class="active"><a href="models/mystudentview.php">My
Students</a></li>-->
        <?php } ?>
        <?php } ?>
        <li><a href="models/adminlogout.php">Log Out</a></li>
    </ul>
</div>
</aside>
</div>
</div>
</div> <!-- end .container -->
</div> <!-- end #page-content -->

```

```

<?php require('views/footer.php'); ?>

```

Supervisor Page

```

<?php

```

```

    include_once("includes/session.php");

```

```

    include_once("includes/zz.php");

```

```

    include_once("includes/functions.php");

```

```

?>

```

```
<?php require('views/header.php'); ?>
```

```
<div id="page-content">
```

```
<div class="container">
```

```
<div class="row">
```

```
<div class="col-sm-8 page-content">
```

```
<div class="white-container mb0">
```

```
<form method='post' action="models/newsupervisorreg.php">
```

```
<fieldset>
```

```
<legend>New Supervisor</legend>
```

```
<div id='thegentable'>
```

```
<label>
```

Staff No:

```
</label>
```

```
<input type="text" name="staffno" >
```

```
<label>
```

Firstname

```
</label>
```

```
<input type="text" name="fname" >
```

```
<label>
```

Surname

```
</label>
```

```
<input type="text" name="sname" >
```

```
<label>
```

Middlename

```
</label>
```

```
<input type="text" name="mname" >
```

```

<label>
    Sex
</label>
<select name='sex' required>
    <option selected>---Select Sex---</option>
    <option value='Male'>Male</option>
    <option value='Female'>Female</option>

</select>
<label>
    Faculty
</label>
<input type="text" name="college" >

<label>
    Department
</label>
<input type="text" name="dept" >
<label>
    Degree
</label>
<input type="text" name="program" >

<br>
<input type="submit" name="submit" class="btn btn-default" value='Save'>
<a href="assignment.php" id='hiddenew' class="btn btn-primary" >Cancel</a>
</div>
</fieldset>
</form>
</div>

```

```
</div>

<div class="col-sm-4 page-sidebar">
  <aside>
    <div class="widget sidebar-widget white-container links-widget">
      <ul>
        <li><a href="#">Welcome <?php echo $_SESSION['fname'];?></a></li>
        <li><a href="dashboard.php">Assign Supervisors Roles</a></li>
        <li class="active"><a href="assignment.php">Supervisors</a></li>
        <li><a href="models/mystudentview.php">My Students</a></li>
        <li><a href="models/adminlogout.php">Log Out</a></li>
      </ul>
    </div>
  </aside>
</div>
</div>
</div> <!-- end .container -->
</div> <!-- end #page-content -->

<?php require('views/footer.php'); ?>
```