A

TECHNICAL REPORT

ON STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (S.I.W.E.S)

BY

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DU0252

UNDERTAKEN AT

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ABSTRACT

This is a Student Industrial Work Experience Scheme (SIWES) report on activities done at **Prudence Interconnectivity and Co Nig. Ltd.** The exercise involved training sessions that lasted for three months at two different units of the establishment (Front-end development and Back-end development). Six weeks each were spent at the Front-End Development department and Back-End development department where experience was garnered on various areas. Hence this report contains a comprehensive summary of all activities undergone and the experiences gained, while highlighting the significance of the experience and its relevance to software engineering. For the compilation of this report, research was made on the history and rationale behind the Students' Industrial Work Experience Scheme, and from the findings, it was concluded that the training scheme is indeed relevant to students of Science, Engineering and Technology.

CERTIFICATION

This is to certify that OLUWASEYI TIMILEYIN BOLUWATIFE with matriculation number DU0252 compiled this report on completion of Students' Industrial Work Experience Scheme.

……..	……
Student's Name	Signature and Date
…….	…….
SIWES coordinator (University based)	Signature and Date

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ACKNOWLEDGEMENT

Firstly, my deepest acknowledgement goes to God almighty, for His overwhelming love upon my life during S.I.W.E.S.

My special appreciation goes to my parents, for their constant all-round support throughout S.I.W.E.S.

I also wish to acknowledge my instructor Mr. Egbinola David Olawale for his effort to carry me along during the training and also the S.I.W.E.S for giving me an opportunity to acquire more practical knowledge.

I submit my heartiest gratitude to the Head of Department of Computer Science Department, the SIWES coordinator, and all the lecturers in my department for their sincere support throughout the course of SIWES.

DEDICATION

I would like to dedicate this report to Almighty God, who has been my ultimate source of happiness, strength, wisdom for the prosperous completion of my SIWES program in one piece.

I would also like to dedicate this report to my parent Mr. and Mrs. O Ogundipe, for their all-round support throughout the SIWES program.

CHAPTER ONE

1.0 INTRODUCTION

The Students Industrial Work Experience Scheme (SIWES) is a program for developing skills that exposes and gets tertiary students ready for the industrial work environment they will likely encounter after graduation. Additionally, it is a planned and structured program with clearly defined professional objectives, targeted toward enhancing participants' occupational competencies (Mafe, 2009). Consequently, all Nigerian university students enrolled in particular courses must complete the SIWES program in order to graduate.

The Students Industrial Work Experience Scheme (SIWES) is the recognized training program that is a component of the various degree programs' approved Minimum Academic Standard for all Nigerian Universities. The program aims to close the existing gap between theory and practice in professional educational programs offered by Nigerian tertiary institutions in the fields of science, agriculture, medicine (including nursing), engineering and technology, management, and information and communication technology. It aims to familiarize students with tools and machinery, professional work practices, and strategies for protecting workplaces and employees in offices, laboratories, hospitals, and other establishments.

1.1 ORIGIN OF SIWES

Industrialists and other labor employers were worried before the Scheme was created that Nigerian university graduates lacked the practical background education necessary for employment in industries and other organizations. The employers concluded that our higher education was primarily theoretical and did not adequately address the needs of employers of labor. This was the justification behind the Industrial Training Funds ITF's 1973 creation of the program.

The program is a tripartite one that involves universities, employers of labor, and students. The National Universities Commission and the Industrial Training Fund (ITF) collaborate to coordinate it, which is supported by the federal government (NUC).

1.2 OBJECTIVE OF SIWES

1. To provide a means for Nigerian university students to gain practical knowledge and experience in the workplace during their studies;
2. To prepare students for the workplace environment they will likely encounter after graduation;
3. To expose students to work methods and techniques in handling equipment and machinery that may not be available in their universities;
4. To make the transition from school to the working world easier and facilitating students' further education.

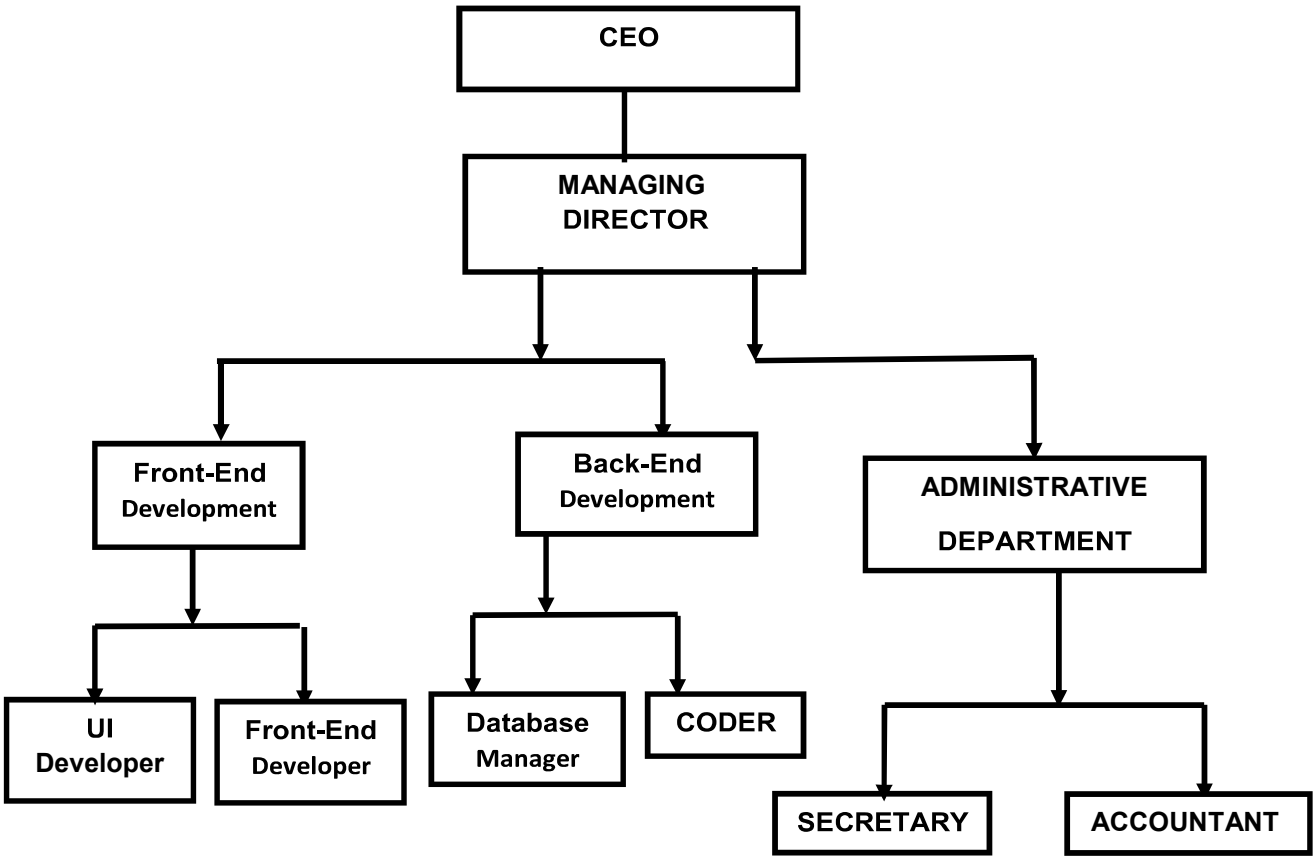
CHAPTER TWO

1.0 HISTORY OF THE ESTABLISHMENT

The name of the establishment is Prudence Interconnectivity & CO NIG LTD located at Tobacco Junction, Oyo, Oyo State, Nigeria. It was established in 2017. It is a private owned established by the managing director, Mr. Makinde Tolulope.

1.1 STRUCTURE OF THE ESTABLISHMENT

The organization structure is as follows:



CHAPTER THREE

3.0 DETAILED DESCRIPTION OF TASKS PERFORMED AND EXPERIENCES ACQUIRED

FRONT-END DEPARTMENT/UNIT

WEB DEVELOPMENT

Web development is the work involved in developing a web site for the Internet (World Wide Web) or an intranet (a private network). Web development can range from developing a simple single static page of plain text to complex web-based internet applications (web apps), electronic businesses, and social network services.

Web development usually refers to the main non-design aspects of building web sites: writing mark-up and coding. Web development may use content management systems (CMS) to make content changes easier and available with basic technical skills.

DEFINITION OF TERMS

The following are terms that were made use of, in this department;

WEBSITE

A website is a set of related webpages containing content such as texts, images, videos, audiosetc

WEBPAGE

A webpage is a document, typically written in plain text interspersed with formatting instructions of hypertext nark up language (HTML, XHTML).

HTTP

This stands for Hyper Text Transfer Protocol which is the set of rules for transferring files (text, graphic, images, sound, video, and other multimedia files) on the World Wide Web.

URL

This stands for **Uniform Resource Locator** and as the name suggests, it provides a way to locate a resource on the web, the hypertext system that operates over the internet.

WEB HOSTING

Web hosting is a service of providing online space for storage of web pages. These web pages are made available via World Wide Web. The companies which offer website hosting are known as Web hosts.

TYPES OF HOSTING (SERVER)

1. **Shared Hosting:** In shared hosting, the hosting company puts thousands of websites on the same physical server.
2. **Virtual Private Server (VPS):** It is also known as Virtual Dedicated Server. It is a server which is partitioned into smaller servers. In this customer is given their own partition, which is installed with its own operating system.
3. **Dedicated Server:** In this kind of hosting, single dedicated server is setup for just one customer.

4. **Reseller Hosting:** A reseller acts as a middle man and sells hosting space of someone else's server.

5. **Grid Hosting:** Instead of utilizing one server, Grid Hosting spreads resources over a large number of servers. It is quite stable and flexible. The servers can be added or taken away from the grid without crashing the system.

HTML

This is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of thepage.

HTML Tags

HTML tags are element names surrounded by angle brackets:
<tagname>content goes here...</tagname>

- HTML tags normally come **in pairs** like and
- The first tag in a pair is the **start tag,** the second tag is the **end tag**
- The end tag is written like the start tag, but with a **forward slash** inserted before thetag name

Some HTML elements are as follows:

1. HTML Heading (<h1></h1> –<h6></h6>)
2. HTML Paragraph ( )

3. HTML Links (<a>)
4. HTML Images (<img></img>)
5. HTML Button (<button></button>)
6. HTML Lists (ol (li), ul (li))

HTML Layouts

Websites often display content in multiple columns (like a magazine or newspaper). HTML offers several semantic elements that define the different parts of a web page:

Responsive Webpages

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink,or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):

CSS AND ITS PROPERTIES

CSS stands for Cascading Style Sheet used for formatting html document. It is a stylesheet language used for describing the presentation of a document written in a mark- up language.

Method used by CSS in Formatting HTML Document

1. **Inline Style:** It is used to apply a unique style to a single HTML element. An inline CSSuses the style attribute of an HTML element.
2. **Embedded / Internal Style:** It is used if one single page has a unique style. Internal styles are definedwithin the <style> element, inside the <head> section of an HTML page.
3. External Style: With an external style sheet, you can change the look of an entire website by changing just one file. Each page must include a reference to the external style sheet file inside the <link> element. The <link> element

goes inside the <head> section. External CSS is a file that contains only CSS code and is saved with a ".css" file extension.

CSS SELECTORS

CSS selectors are used to find or select HTML elements based on their element name, id or class.

1. Element Selector: The element selector selects elements based on the element name.
2. Id Selector: The id selector uses the id attribute of an HTML element to select a specificelement. The id of an element should be unique within a page, so the id selector is used to select one unique element. e.g. id="hello" css #hello {c

olor;red;}

3. Class Selector: The class selector selects elements with specific class attribute. To select elements with a specific class, write a period (.) character followed by the name of theclass. e.g. center {text-align:center;}.

EXPERIENCES GAINED IN THE FRONT-END UNIT

1. Deep knowledge on designing a beautiful and responsive webpage.
2. Ability to create website templates using the three CSS layout methods (float-property, flex-box and grid method)
3. Gained some best practices in writing codes.

BACK-END DEPARTMENT/UNIT

PHP AND ITS PROPERTIES

PHP was originally called PHP/FI which means Personal Home Page/Form Interpreter in1995 by Ramus Leardof. It was a collection of Perl Script for handling form submission but lack many useful language features such as for loop. PHP/F2 was written in1997 by Ramus yet with some lacking feature and poor execution style. e.g. the while loop.PHP 3 which means PHP Hypertext Pre-processor was later written by Ramus, Zeave Audraski and Andi Gutman in 1998 with improvement and added feature like database access.

PHP 4 was written with the sluggard "Compare First and execute Later" Style in late 1998.The compile code will be use to execute the object code using the Zend Engine. PHP 5 contain improved object-oriented feature.

COMMON USES OF PHP

PHP performs system functions i.e. from files on a system it can create, open, read,write, and close them. The other uses of PHP are:

- PHP can handle forms, i.e. gather data from files, save data to a file, through email.
- You add, delete, and modify elements within your database through PHP.
- Access cookies variables and set cookies.
- Using PHP, you can restrict users to access some pages of your website.
- It can encrypt data.

ENVIRONMENTAL SETUP

In order to develop and run my PHP web pages, three (3) vital components wereinstalled on my computer system.

Web Server:

PHP will work with virtually all web server software, including Microsoft InternetInformation Server (IIS), wamp server and xampp.

Database:

PHP will work with virtually all database software, including MySQL, Oracle.

PHP Parser:

In order to process PHP script instructions, a parser must be

installed to generateHTML output that can be sent to the Web Browser.

PHP OPERATIONS

This are operations that are performed in PHP. These operations are as follows;

1. Arithmetic operations
2. Comparison operations
3. Assignment operations
4. Increment or Decrement operations

PHP MySQL DATABASE

- MySQL is a database system used on the web
- MySQL is a database system that runs on a server
- MySQL is ideal for both small and large applications
- MySQL is very fast, reliable, and easy to use
- MySQL uses standard SQL
- MySQL compiles on a number of platforms
- MySQL is free to download and use
- MySQL is developed, distributed, and supported by Oracle Corporation
- MySQL is named after co-founder Monty Widenius's daughter: My

The data in a MySQL database are stored in tables. A table is a collection of relateddata, and it consists of columns and rows.

WORDPRESS

WordPress provides the most amazing way of creating websites and blogs. More than 34% of the websites are built using WordPress. So, it can be said that this popular content management system is famous for developing blogging sites and websites. Today, WordPresshas proudly brought the most supportive and useful blogging community on the web.
Thousands of sites (news, updates, resources, training, tutorials — the list is endless) existswhich inherit and make use of WordPress.

WordPress is an open source Content Management System (CMS), which allows theusers to build dynamic websites and blogs. Wordpress is the most popular blogging system on the web and allows updating, customizing and managing the website from its back-end CMS and components. WordPress was initially released on 27th May, 2003 by Matt Mullenweg and Mike Little. WordPress was announced as open source in October 2009.

SYSTEM REQUIREMENTS FOR WORDPRESS INSTALLATION ON WINDOWS

- On a windows operating system, XAMPP or WAMPP or LOCAL or any other localserver is required.
- Wordpress installation file.
- A Browser.
- Wordpress is compatible with PHP 5.2+ and MySQL 5.0+

INSTALLING WORDPRESS.

After extracting the downloaded wordpress installation file and it has been uploadedto the localhost or web server project folder.

Get ready a database name because, it will be required to install Wordpress.

Step 1: Open a web browser and navigate the URL or Wordpress folder path (example –http://localhost/htdocs/wordpress_project_folder_name)

Step 2: The wordpress installation setup will ask about the language preference on the firstpage. Here, a preferred language can be chosen.

Step 3: Installation second page provides information about required information before proceeding.

Step 4: On this page, one has to provide MySQL database connection credentials.

Step 5: Here the admin information will be asked.

EXPERIENCES GAINED IN THE BACK-END UNIT

1. Ability to debug errors and been creative in arrangement of codes.
2. Gained experience on how to set-up wordpress both offline and offline.
3. Gained experience on how to work with MySQL databases.
4. I was able to gain more practical knowledge when it comes to web development.

CHAPTER FOUR

4.0 CHALLENGES ENCOUNTERED

Below are the major challenges I had during SIWES;

1. I had difficulties finding placement for SIWES.
2. I could not get an accommodation close to the company I was doing my SIWES, I had to be spending money on transport.
3. They devoted little of their time to teaching SIWES student as it is a Web development training school.
4. I had difficulties when it comes to making a website responsive.

4.1 CONCLUSION

The SIWES program was a success and a great time of acquisition of knowledge andskills. Throughout the SIWES program, I was able to appreciate my chosen course of study even more, because I had the opportunity to blend the theoretical knowledge acquired from school with the practical hands-on application of knowledge gained here to perform very important tasks that contributed in a way to my productivity in the company.

The program has given me a broader view to the importance and relevance of Web development in the immediate society and the world as a whole, as I now look forward to impact it positively. I have also been able to improve my communication and presentation skills and thereby developed good relationship with the staffs of the

company.

4.2 RECOMMENDATIONS

Having gone through the SIWES program, I have the following suggestions for theeffectiveness of SIWES:

- Companies should show more commitment to the training of SIWES students so as to improve the quality of training given.
- Government should endeavor to improve business relationships with companies that have SIWES students, as way of adding importance to the scheme, in reality.
- Students or trainees should learn to comport themselves well in these companies so as not to send a bad signal which may discourage such company from accepting SIWES students again.

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