

**A TECHNICAL REPORT ON**  
**STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME**  
**(SIWES)**

UNDERTAKEN AT:  
**Randatech Systems Limited**  
**Jaoji, Kano STATE**

BY  
**OGBA GODSON OKECHUKWU**  
**(NS/CSC/24/9340)**

**MARCH 17<sup>TH</sup> – AUGUST 08<sup>TH</sup>,2025.**

**DEPARTMENT OF COMPUTER SCIENCE**  
**FACULTY OF NATURAL AND APPLIED SCIENCE**  
**TANSIAN UNIVERSITY**

**P.M.B 5080, UMUNNYA, ANAMBRA**  
**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS**  
**FOR THE AWARD OF BACHELOR OF SCIENCE (B.SC) DEGREE IN**  
**THE FACULTY OF NATURAL SCIENCE, OF TANSIAN UNIVERSITY,**  
**UMUNNYA, ANAMBRA STATE.**

## **CERTIFICATION**

This is to certify that **OGBA GODSON OKECHUKWU**, a student of **Tansian university umunya**, with Matric Number **NS/CSC/22/7428**, successfully completed the **Student Industrial Work Experience Scheme (SIWES)** at **Randotech system limited , Jaoji, kanoState.**

The training lasted for a period of **four (4) months**, from to **MARCH 17<sup>TH</sup> - AUGUST 08<sup>TH</sup>,2025**, during which the student was exposed to practical experience in **fullstack, HTML, CSS , PHP, API development, and Database Management (MongoDB)**.

This report is hereby submitted as a true record of the student's industrial training experience.

## **DEDICATION**

To the Almighty God, who blessed me with wisdom and knowledge throughout my six (6) months of training at One-Way Technologies Limited.

To my loving family, whose unwavering support and encouragement strengthened my journey — thank you for being my rock and inspiration.

And to everyone who contributed to making my six months of training a success, may God Almighty bless you all. Amen.

## **ACKNOWLEDGEMENT**

I express my sincere appreciation to the Federal Ministry of Communications, Innovation & Digital Economy and the National Information Technology Development Agency (NITDA) for their foresight in organizing this program and providing a platform to enhance our practical experience in the field of Information Technology.

My profound gratitude goes to **Randatech Systems Limited** for equipping me with valuable technical skills relevant to my field of study. I am especially thankful to my industry-based supervisors **Abdulazeez Adeshina Abdurasheed** for their guidance, support, and mentorship throughout the duration of the program. I am equally grateful to all my colleagues at Randatech Systems Limited for making the experience both productive and memorable.

Furthermore, I would like to express my appreciation to my institution-based supervisor for his continuous support, encouragement, and direction. Thank you, sir. God bless you.

To everyone who contributed in one way or the other to the success of this program, **thank you**. I remain truly grateful.

## **ABSTRACT**

This report presents my four-month Student Industrial Work Experience Scheme (SIWES) carried out at **Randatech Systems Limited**, where I gained hands-on experience in modern software development and fullstack development. As a Computer Science student, the program enabled me to apply theoretical concepts learned in the classroom to real industry projects, thereby bridging the gap between theory and practice.

During the internship, I acquired technical competence in:

**Web Development:** HTML, CSS, PHP,

**Version Control:** Git and GitHub

In addition to technical skills, I developed essential soft skills such as:

**Problem-solving and analytical thinking**

**Collaboration and teamwork**

This report outlines the tasks performed, challenges encountered, solutions implemented, and the overall learning outcomes. The experience has significantly improved my technical skills, enhanced my understanding of backend development processes, and prepared me for real-world industry expectations.

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## **CHAPTER ONE**

### **INTRODUCTION TO SIWES**

#### **1.1 Background of SIWES:**

The Student Industrial Work Experience Scheme (SIWES) is a practical skills development program established by the Industrial Training Fund (ITF) in 1973. The main purpose of the scheme is to bridge the gap between theoretical knowledge acquired in the classroom and the practical experience required in the industry.

SIWES provides students in fields such as Engineering, Technology, Environmental Studies, and Applied Sciences with real-life industrial exposure. Through this scheme, students have the opportunity to work with modern equipment, tools, and techniques that may not be available in their academic institutions.

The program was designed to address the skill deficiencies often observed among Nigerian graduates and to prepare them for the demands of the professional world. It helps students gain hands-on technical experience while also developing essential soft skills such as teamwork, communication, and problem-solving.

Participation in SIWES has become a mandatory requirement for students in relevant disciplines, in line with government educational policies. The training typically spans six months for university students, providing sufficient time for them to learn, adapt, and apply industry-relevant skills.

## **1.2 History of SIWES:**

The Student Industrial Work Experience Scheme (SIWES) was established in 1973 by the Industrial Training Fund (ITF) following the Federal Government's recognition of the need to improve the quality of education in Nigeria. The aim was to ensure that graduates acquired the practical skills necessary to meet the technological and industrial needs of the nation.

Initially, the ITF solely funded and managed the scheme. However, due to the high cost of administration, the program was temporarily suspended in 1978. In 1979, the Federal Government handed over the supervision of SIWES to the National Universities Commission (NUC) and the National Board for Technical Education (NBTE) to enhance its management and coordination.

By July 1985, the Industrial Training Fund (ITF) resumed full control of SIWES, with funding responsibilities taken over by the Federal Government. Since then, the ITF, in collaboration with the NUC, NBTE, the National Commission for Colleges of Education (NCCE), employers of labour, and participating institutions, has continued to manage and strengthen the scheme.

Over the years, SIWES has played a vital role in human capacity development and has contributed significantly to Nigeria's technological and industrial growth.

## **1.3 Aim and Objectives of SIWES:**

The primary aim of the Student Industrial Work Experience Scheme (SIWES) is to expose students to real-life industrial environments, enabling them to apply theoretical knowledge gained in the classroom to practical situations. It helps bridge the gap between academic learning and professional practice.

The specific objectives of SIWES include:

1. To provide students with an opportunity to acquire industrial skills and experience in their chosen fields of study.
2. To prepare students for the work environment after graduation by familiarizing them with industrial equipment, systems, and techniques.
3. To expose students to work methods, organizational structures, and industrial discipline
4. To enable students to develop technical, interpersonal, and problem-solving skills.
5. To strengthen the relationship between educational institutions and industries in Nigeria.

#### **1.4 Functions of SIWES:**

The Student Industrial Work Experience Scheme (SIWES) performs several important functions that contribute to the development of skilled manpower for national growth. These functions include:

1. Serving as a platform for students to gain hands-on experience related to their academic disciplines.
2. Providing a means for industries to identify and nurture potential future employees.
3. Bridging the gap between theoretical classroom learning and practical industrial application.
4. Promoting collaboration between educational institutions, industries, and government agencies.

## **1.5 Organogram of SIWES:**

The SIWES organizational structure involves several bodies that work together to ensure the successful planning, supervision, and implementation of the program. These include:

1. The Federal Government – Provides overall policy direction and funding for the scheme.
2. Industrial Training Fund (ITF) – Serves as the coordinating and administrative body responsible for managing the scheme
3. Supervising Agencies – These include the National Universities Commission (NUC), the National Board for Technical Education (NBTE), and the National Commission for Colleges of Education (NCCE), which oversee the participation of their respective institutions
4. Employers of Labour / Industry-Based Supervisors – Provide industrial training, monitor student progress, and evaluate performance.
5. Institutions / Institution-Based Supervisors – Nominate students for SIWES, monitor their performance, and ensure compliance with ITF guidelines.
6. Students (Trainees) – Participate actively in the training, maintain logbooks, and comply with all regulations.

## **CHAPTER TWO**

### **INTRODUCTION TO THE COMPANY (KODEX AFRICAN)**

#### **2.1 Background and History of the Organization:**

Randatech Systems Limited is an information and communication technology (ICT) solutions company based in Kano, Nigeria. The organization specializes in delivering professional IT services including software development, web solutions, UI/UX design, cybersecurity, data backup and recovery, ICT consulting, and digital transformation for individuals, businesses, and government agencies.

The company operates from its headquarters located at **Last Floor, Gidan Nasir Ahmed, 3 Zaria Road, Dangi Underpass, Kano State, Nigeria**. Through its services, Randatech aims to support business growth by providing world-class technological solutions and strategic digital consultancy.

#### **History of Randatech Systems Limited:**

Randatech Systems Limited was officially incorporated on **1st February 2012** under the Corporate Affairs Commission (CAC) with the

registration number **RC-1007439**. Since its establishment, the organization has steadily grown into a reputable ICT brand in Northern Nigeria.

Over the years, Randatech expanded its services from basic ICT solutions to offering advanced services such as cybersecurity, cloud solutions, digital branding, enterprise software, and IT consulting. The company has also contributed significantly to digital literacy by providing structured ICT training programs that equip learners with practical skills needed for modern tech careers.

Randatech's development has included:

- **Expansion of ICT training programs** targeted at youth empowerment and workforce readiness.
- **Growth in software and web development services**, serving clients across various sectors.
- **Increased role in business and IT consulting**, supporting organizations in digital transformation.
- **Participation in community-based tech initiatives**, further promoting technology adoption in Kano.

Today, Randatech continues to function as both a technology solutions provider and an ICT training hub with a mission to deliver reliable, innovative, and scalable digital services.

## **2.2 Functions of the Company :**

Randatech Systems Limited is a technology-driven organization focused on building digital capacity, developing innovative software solutions, and empowering individuals and businesses through technology. The company performs several key functions which include:

1. **Tech Education and Training:** Randatech Systems Limited trains students, graduates, and professionals in modern digital and programming skills such as web development, backend engineering, UI/UX design, data analytics, and product management through the Kodex Academy.

2. Software Development: The company designs and develops software solutions and web applications tailored to meet business and societal needs.
  3. Product Innovation: Randatech Systems Limited builds and incubates digital products and startups that address local challenges using technology.
  4. IT Consultancy: The organization provides consultancy services to companies and startups on digital transformation, IT infrastructure, and project management.
  5. Community Development: Through initiatives like TheSpace.ng, Randatech Systems Limited hosts tech events, hackathons, and networking programs to promote collaboration among tech enthusiasts.
- 
6. Research and Development (R&D): The company engages in continuous research to explore emerging technologies and improve its training and development strategies.

## **2.3 Units and Organogram of the Establishment**

Randatech Systems Limited operates through a structured set of units that ensure efficient service delivery and organizational coordination. These include:

### **1. Management Unit**

Responsible for strategic planning, leadership, policy formulation, supervision, and overall corporate governance.

### **2. Training and ICT Academy Unit**

Handles course development, training facilitation, student enrollment, practical sessions, and certification for ICT programs.

### **3. Software and Web Development Unit**

Develops, tests, and deploys web applications, mobile apps, and enterprise software for both internal and external clients.

### **4. Product and Innovation Unit**

Focuses on creating new digital solutions, improving service delivery processes, and driving innovation within the company.

### **5. Marketing and Communications Unit**

Manages brand promotion, digital marketing, social media engagement, customer relations, and client outreach activities.

### **6. Technical Support and Maintenance Unit**

Provides IT support services, hardware and software troubleshooting, network management, and technical assistance across departments.

### **7. Human Resources Unit**

Oversees staff recruitment, training, performance management, employee welfare, and organizational development.

## **CHAPTER THREE**

### **EXPERIENCE GATHERED**

#### **3.1 Practical Experience of the Program (Frontend & Backend – HTML, CSS, PHP, Website Development, etc.)**

During my Student Industrial Work Experience Scheme (SIWES) at **Randatech Systems Limited, Kano**, I gained extensive practical experience in full-stack web development using **HTML, CSS, PHP, and MySQL**.

The training exposed me to real-world website development processes, from designing user interfaces to building dynamic and database-driven web applications.

This experience helped me move from basic theoretical knowledge to understanding how modern websites are structured, styled, programmed, and deployed.

## **Understanding the Roadmap**

# **Web Development Roadmap**



## **3.2 HTML (HyperText Markup Language)**

HTML is the **standard markup language** used to create and structure content on the web. Every website begins with HTML because it provides the basic skeleton that browsers read and display. During my SIWES training, I learned how to structure webpages properly, use semantic elements, and ensure that my pages are clean, accessible, and user-friendly.

### **What HTML Does**

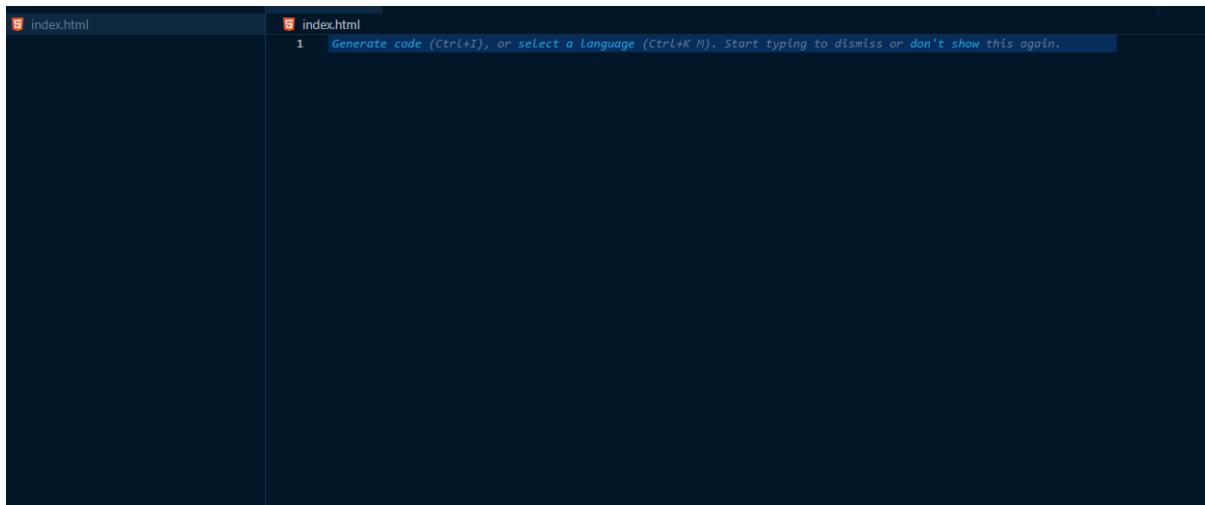
HTML defines the **structure** of a webpage. It tells the browser:

- 1.** Where to display headings
- 2.** Where paragraphs should go
- 3.** What text is clickable
- 4.** Where images appear
- 5.** How forms collect user input
- 6.** How different sections of a page are organized

In simple terms, HTML forms the **building blocks** of all webpages.

### **How to Create an HTML File (index.html)**

One of the first tasks I learned during training was how to create an HTML document, starting with the main file in



## Write the Basic HTML Structure

Every HTML page begins with a standard template called the **boilerplate**.

A screenshot of a code editor window titled "index.html". The editor has a dark theme. The code in the editor is as follows:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Document</title>
  </head>
  <body></body>
</html>
```

The code is numbered from 1 to 10 on the left side. The entire code block is highlighted with a blue selection bar at the bottom.

<!DOCTYPE html> Document type declaration Tells the browser this is an HTML5 document  
<html> Root element Wraps the entire webpage  
<head> Header information Contains metadata, title, links to CSS  
<title> Page title Appears on the browser tab  
<body> Main content Everything visible to the user

## Important HTML Elements Learned During Training:

## **1. Headings (<h1> to <h6>)**

Headings are used to create titles and organize page content in levels, where `<h1>` is the most important and `<h6>` is the least. They help structure a page and improve readability.

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## **2. Paragraph (<p>)**

The paragraph tag is used to display blocks of text. It is one of the most common elements on any webpage.

---

## **3. Links (<a>)**

Links allow users to navigate to other pages or websites. They use the `href` attribute to point to a destination URL.

---

## **4. Images (<img>)**

This element is used to display images on a webpage. It requires the `src` attribute to specify the file path and `alt` text for accessibility.

---

## **5. Tables (<table>, <tr>, <th>, <td>)**

Tables are used to display structured data in rows and columns.

- `<tr>` defines a row
  - `<th>` defines a table header
  - `<td>` defines a data cell
-

## **6. Form (<form>)**

Forms allow users to enter and submit information. They contain inputs, buttons, and other interactive elements.

---

## **7. Input Fields (<input>)**

Used inside forms to collect data from users. It supports different types like text, email, password, etc.

---

## **8. Semantic Elements (<header>, <nav>, <section>, <article>, <footer>)**

These elements give meaning to page sections:

- <header> – top section
- <nav> – navigation menus
- <section> – main content sections
- <article> – independent articles or posts
- <footer> – bottom of the page

They improve accessibility and SEO.

### **3.3 CSS (Cascading Style Sheets)**

CSS is the language used to **style and design** the structure created with HTML. While HTML provides the content of a webpage, CSS makes it visually appealing by controlling layout, colors, spacing, fonts, and overall presentation.

During my SIWES training, I learned how CSS transforms a plain HTML page into a visually attractive and user-friendly interface. The training covered both the fundamental concepts

#### **Types of CSS (Inline, Internal, External)**

During my training, I learned that CSS can be applied to HTML documents in three major ways. Each method is used for different situations depending on the size of the project and styling needs.

##### **1. Inline CSS**

Inline CSS is when styles are applied **directly inside an HTML element** using the `style` attribute.

**Example:**

```
1  <p style="color: blue; font-size: 18px">This is a styled paragraph.</p>
```

##### **2. Internal CSS**

Internal CSS is written **inside the `<style>` tag** within the `<head>` section of an HTML file.

## Example:

```
1 <head>
2   <meta charset="UTF-8" />
3   <meta name="viewport" content="width=device-width, initial-scale=1.0" />
4   <title>Document</title>
5   <style>
6     p {
7       color: red;
8       font-size: 20px;
9     }
10  </style>
11 </head>
```

## 3. External CSS

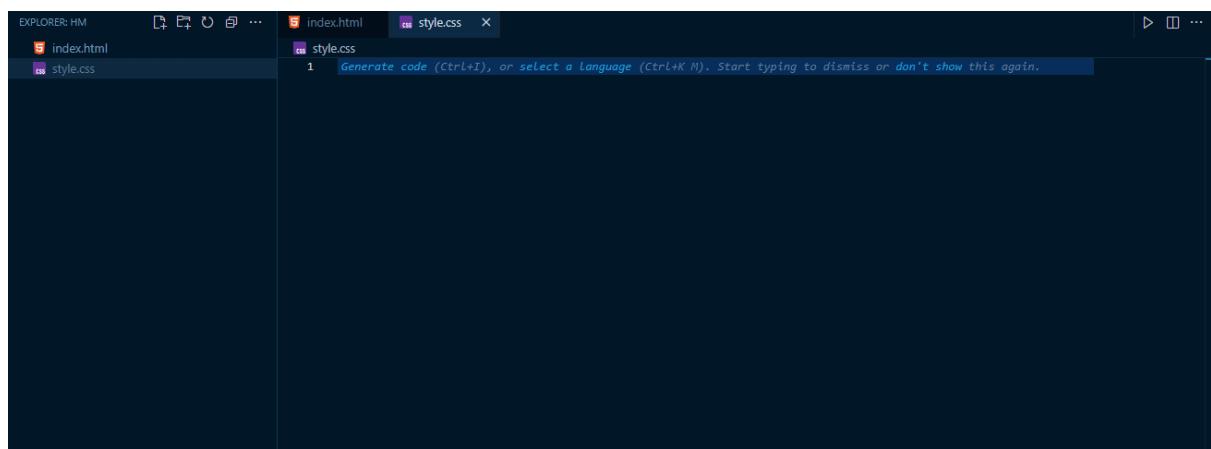
External CSS is written in a **separate .css file**, then linked to the HTML file using the `<link>` tag.

### Example:

HTML:

```
1 <head>
2   <meta charset="UTF-8" />
3   <meta name="viewport" content="width=device-width, initial-scale=1.0" />
4   <title>Document</title>
5   <link rel="stylesheet" href="./style.css">
6 </head>
```

style.css:



of CSS and how to apply them in real-world website development.

## **Important CSS Topics Learned During Training**

### **1. Selectors**

Understanding how to target HTML elements using class selectors, ID selectors, element selectors, and universal selectors.

### **2. Box Model**

Learning how margin, padding, border, and content work together to control spacing and layout.

### **3. Flexbox**

Using CSS Flexbox to create responsive layouts, align items, and manage spacing easily.

### **4. Styling Text & Colors**

Applying fonts, font sizes, colors, backgrounds, and basic visual styling to improve webpage appearance.

## **3.3 Introduction to PHP**

PHP (Hypertext Preprocessor) is a powerful **server-side scripting language** used for building dynamic and interactive web applications. Unlike HTML and CSS, which run on the client's browser, PHP runs on the **server**, processes data, and sends the final output to the user's browser.

During my training, I learned that PHP is commonly used for:

- Handling form submissions
- Working with files and databases

- Managing user login systems
- Creating dynamic web pages
- Building complete backend logic for websites

PHP is easy to learn, widely used, and integrates smoothly with HTML, making it a popular choice for beginners and professionals. I also learned how PHP scripts are written inside `<?php ... ?>` tags and executed on a server such as XAMPP or WAMP.

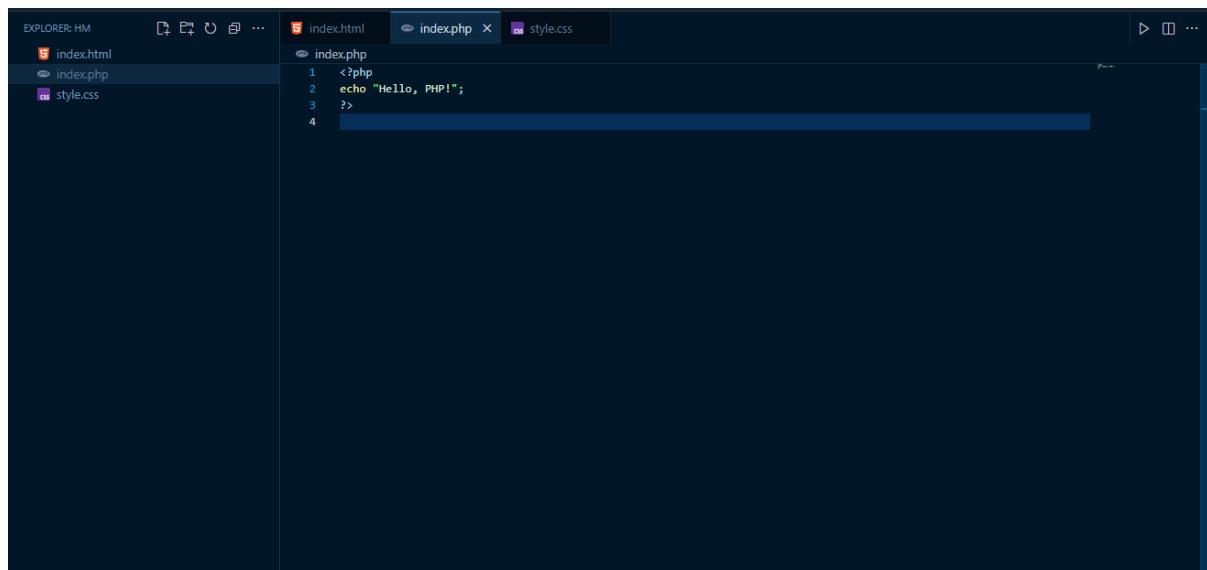
This foundational knowledge prepared me to build functional and interactive websites using HTML for structure, CSS for styling, and PHP for backend functionality.

## **1. How to Create a PHP File**

Creating a PHP file is very simple.

Steps:

1. Open your editor (VS Code, Sublime Text, etc.)
2. Create a new file.
3. Save it with the extension:  
**index.php**
4. Inside the file, write your first PHP scrip



The screenshot shows the Visual Studio Code interface. In the Explorer panel on the left, there are three files: index.html, index.php, and style.css. The index.php file is currently open in the main editor area. Its content is:

```
1 <?php
2 echo "Hello, PHP!";
3 ?>
```

## 2. How to Run PHP on a Local Server

Since PHP is a **server-side** language, it cannot run by just double-clicking the file. You need a **local server environment**.

Two common methods to run PHP:

### **Method 1:** Using XAMPP (Most Common for Beginners)

#### **Steps:**

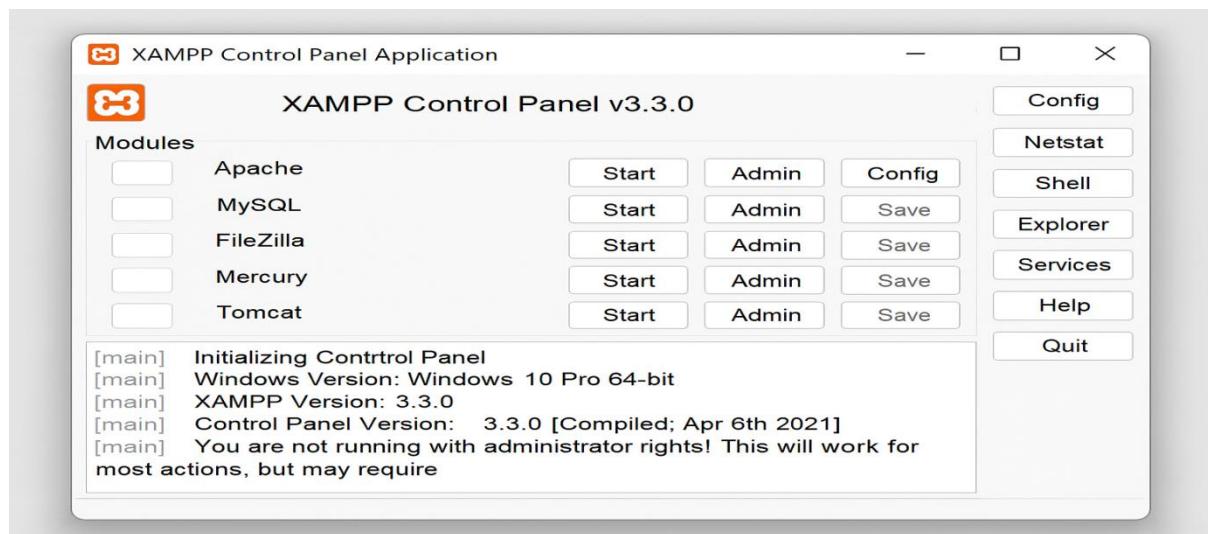
1. Install XAMPP.
2. Open XAMPP Control Panel.
3. Start **Apache**.
4. Place your project in this folder:  
**C:\xampp\htdocs\yourproject**
5. Open your browser and visit:  
**http://localhost/yourproject**

This loads and runs the PHP file on the server.

### **Method 2:** Using PHP's Built-in Server (VS Code)

*(Useful when PHP is installed on your system)*

Open your project folder and run:



## **CHAPTER FOUR**

### **SUMMARY, CONCLUSION, AND RECOMMENDATION ,CERTIFICATION AND REFERENCES**

#### **4.1 Summary**

This report documented my Student Industrial Work Experience Scheme (SIWES) at **Randatech Systems Limited, Kano**, focusing primarily on **web development using HTML, CSS, and PHP**. During the program, I gained both theoretical and practical knowledge in designing and developing dynamic websites.

The training gave me hands-on experience in:

- Structuring webpages using **HTML**
- Styling user interfaces using **CSS**
- Building dynamic and interactive pages using **PHP**
- Working with XAMPP to run a local server environment for PHP
- Understanding how the frontend and backend work together in a web application

I learned how to create and run PHP scripts, process user input using forms, and display results dynamically on webpages. This experience helped me bridge the gap between classroom theory and practical implementation in real-world website development.

Overall, the SIWES program enhanced my confidence and improved my ability to create complete web solutions using HTML, CSS, and PHP.

#### **4.2 Conclusion**

The SIWES program at Randatech Systems Limited was a highly valuable experience. It introduced me to the practical world of web development and gave me the opportunity to apply what I had learned in HTML, CSS, and PHP.

I learned that web development requires:

- Clean and well-structured HTML
- Proper use of CSS for styling and layout
- PHP for backend logic and dynamic content processing

This experience prepared me to handle real development tasks, work independently, and understand the workflow involved in designing, styling, and programming websites.

The program has equipped me with the essential skills needed to pursue a career in web development.

## **4.3 Recommendation**

### **1. For Students**

- Engage fully in practical exercises, especially HTML, CSS, and PHP projects.
- Learn how to use tools like code editors and XAMPP effectively.
- Practice building complete web pages—from structure to styling to functionality.

### **2. For Institutions**

- Provide more opportunities for students to work on real-life web development projects.
- Introduce regular workshops on HTML, CSS, PHP, and version control tools.
- Ensure practical training includes hands-on coding and project-based learning.

### **3. For Industry Partners**

- Encourage students to participate in real development tasks.
- Provide mentoring on modern web technologies and industry standards.
- Support students with access to development tools and environments like XAMPP.

By following these recommendations, students and institutions can improve their training quality, and industry partners can help produce highly skilled web developers.

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