



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

**FROM
AUGUST TO NOVEMBER, 2024**

**AT
SOLUTECH CITY SOFTWARE COMPANY**

**LOCATED AT CENTURY PLAZA, PLOT 2, KAYODE SADIKU STREET, NEAR FORMER
PANAT FEED MILL, SANGO AREA, ILORIN, KWARA STATE**

**PRESENTED BY
MUHAMMED UMAR DANJUMA**

ND/23/COM/PT/0097

**SUBMITTED TO
KWARA STATE POLYTECHNIC, ILORIN**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
ORDINARY NATIONAL DIPLOMA (OND) IN COMPUTER SCIENCE, KWARA
STATE POLYTECHNIC**

REPORT OVERVIEW

This report details the industrial training experience gained during the Student Industrial Work Experience Scheme (SIWES) conducted at Solutech-City Software Company. The report is divided into five chapters:

- Chapter One provides an introduction to SIWES, detailing its background and objectives.
- Chapter Two describes the establishment of attachment, including its location, history, objectives, and organizational structure.
- Chapter Three focuses on the student's specific involvement in various sections and units within the organization.
- Chapter Four discusses the industrial experience, highlighting key lessons learned in HTML, CSS, and JavaScript.
- Chapter Five presents a summary of attachment activities, problems encountered, and recommendations for improving the SIWES scheme.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Background of SIWES	1
1.2 Objectives of SIWES	1

2. DESCRIPTION OF THE ESTABLISHMENT OF ATTACHMENT

2.1 Location and Brief History of Establishment	2
2.2 Objectives of the Establishment	3
2.3 Organizational Structure	4
2.4 The Various Departments/Units in the Establishment and Their Functions	5

3. STUDENT SPECIFIC INVOLVEMENT IN VARIOUS SECTION/UNIT

3.1 Overview of Student Involvement	6
3.2 Software Development Unit	6
3.3 Web Development Unit	7
3.4 Digital Marketing Unit	7

4. INDUSTRIAL EXPERIENCE

4.1 Overview of My Training Experience	8
4.2 My Experience with HTML (HyperText Markup Language)	8
4.3 My Experience with CSS (Cascading Style Sheets)	9
4.4 My Experience with JavaScript	10

5. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Attachment Activities	12
5.2 Problems Encountered During the Program	12
5.3 Suggestions for the Improvement of the Scheme	12

CHAPTER ONE

INTRODUCTION

1.1 Background of SIWES

The Students Industrial Work Experience Scheme (SIWES) is a significant initiative established in 1973 by the Industrial Training Fund (ITF) in Nigeria. It was designed to address the observed gap between theoretical knowledge acquired in academic institutions and the practical skills required in the workplace. SIWES is a skill acquisition program that integrates academic learning with real-world industrial experiences to prepare students for the demands of their chosen careers. Before the introduction of SIWES, graduates from Nigerian tertiary institutions, especially those in science, engineering, technology, and agriculture, faced significant challenges in meeting the technical requirements of various industries. Many lacked the hands-on skills and professional exposure needed for effective performance in the workplace. This mismatch between academic training and industry expectations prompted the ITF to create SIWES as a structured means to equip students with the necessary practical experience and enhance their employability.

SIWES is mandatory for students in accredited tertiary institutions, including universities, polytechnics, and colleges of education, enrolled in courses that require industrial exposure. The program typically lasts six months but may vary depending on the institution or discipline. Students are placed in industries, organizations, or institutions relevant to their courses, where they work under the supervision of both industry professionals and their academic supervisors.

1.2 Objectives of SIWES

The primary objectives of SIWES include:

1. Providing students with practical knowledge of their fields of study.
2. Exposing students to modern technologies and industry standards.
3. Enhancing students' technical and interpersonal skills.
4. Bridging the gap between theoretical knowledge and practical application.
5. Preparing students for future employment opportunities by fostering professionalism and work ethics.

CHAPTER TWO

DESCRIPTION OF THE ESTABLISHMENT OF ATTACHMENT

2.1 Location and Brief History of Establishment

Solutech City Software Company is located at Century Plaza, Plot 2, Kayode Sadiku Street, near Former Panat Feed Mill, Sango Area, Ilorin, Kwara State. This central location offers the company easy access to local and international clients, fostering business relationships and collaborations across the region.

Brief History of Establishment

Solutech City Software Company began its operations in November 2019, with a vision to provide innovative and effective software solutions to meet the growing technological needs of businesses and individuals. Founded by a team of technology enthusiasts, the company aimed to fill the gap in the local tech ecosystem by offering cutting-edge services that bridge the divide between theoretical knowledge and practical application.

Since its establishment, Solutech City has gained recognition for its exceptional services, including software development, web development, digital marketing, and IT consultancy. The company has also contributed to skills development through its computer training programs, which offer both certificate and advanced diploma courses, empowering individuals with the technical expertise needed in today's digital world.

Solutech City has become an integral part of the local tech landscape, offering a broad range of services tailored to the needs of various industries, and positioning itself as a trusted name in the tech sector of Kwara State and Nigeria at large.

2.2 Objectives of the Establishment

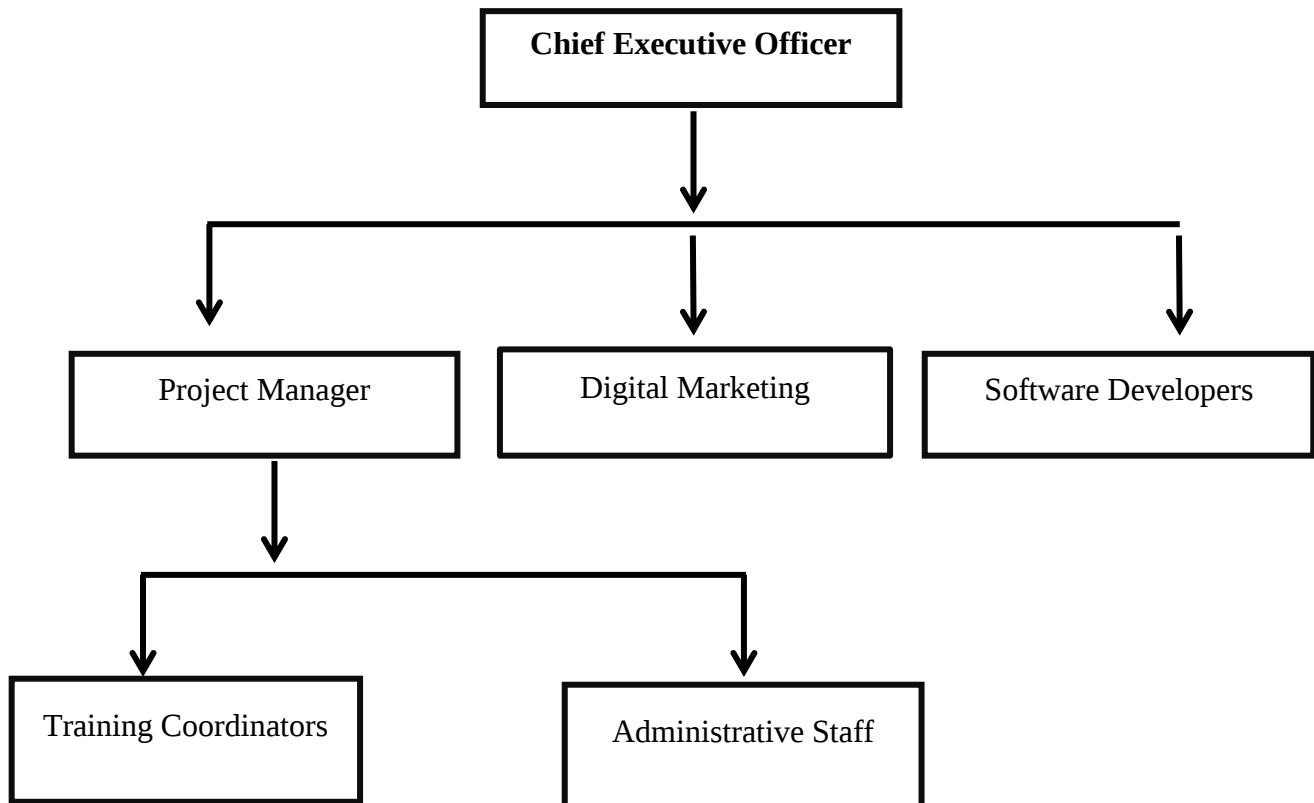
The primary objectives behind the establishment of Solutech City Software Company are centered around providing innovative and effective technology solutions while fostering the growth of the local tech ecosystem. These objectives include:

1. **Providing High-Quality Software Solutions:** The company aims to develop custom software applications that meet the unique needs of businesses, improving their operational efficiency and performance through innovative technology.
2. **Enhancing Technological Development:** By offering specialized services in software development, web design, and IT consulting, Solutech City seeks to drive technological advancement in the region, contributing to the broader development of the Nigerian tech industry.
3. **Fostering Local Talent Development:** One of the key objectives is to empower individuals with the skills and knowledge needed to excel in the IT industry. Through their computer training programs (both certificate and diploma courses), the company provides essential skills to aspiring professionals, helping them to gain industry-relevant expertise.
4. **Bridging the Gap between Theory and Practice:** Solutech City recognizes the need for practical experience in the tech field. The company provides hands-on experience through its services and training programs, preparing individuals and businesses to thrive in real-world environments.
5. **Providing Comprehensive IT Solutions:** The company is dedicated to offering a wide range of IT services, including digital marketing, data processing, and IT consultancy, to meet the evolving technological needs of businesses, helping them to grow and stay competitive in an increasingly digital world.

2.3 Organisational Structure

The organizational structure of Solutech City Software Company is hierarchical, with the following key positions:

- Chief Executive Officer (CEO): Oversees the company's overall operations and strategic direction.
- Project Manager: Manages project timelines, resources, and client relationships.
- Digital Marketing: Leverages Various Digital Marketing Strategies To Help Businesses Enhance Their Online Presence, Attract Potential Customers, And Drive Growth
- Software Developers: Responsible for coding, testing, and deploying software solutions.
- Training Coordinators: Facilitate training sessions for students and interns.
- Administrative Staff: Handle day-to-day operations and logistics.



2.4 The Various Departments/Units in the Establishment and Their Functions

1. Web Development Unit: Focuses on creating and maintaining websites for clients.
2. Software Development Unit: Develops standalone and enterprise software solutions.
3. Training and Mentorship Unit: Provides training programs in web design, programming, and other IT skills.
4. Administration Unit: Handles organizational logistics, staff welfare, and resource management.

CHAPTER THREE

STUDENT SPECIFIC INVOLVEMENT IN VARIOUS SECTIONS/UNITS

This chapter outlines the various roles and responsibilities undertaken by the student during their involvement at **Solutech City Software Company**. It highlights the areas where the student contributed, the tasks they performed, and how their involvement aligned with their academic and professional development goals.

3.1 Overview of Student Involvement

During the period of Industrial Training (SIWES), the student had the opportunity to work in various sections and units of the company, gaining hands-on experience and insight into the practical application of the skills learned in academic studies. The student was engaged in different aspects of the company's operations, contributing to the completion of projects and providing valuable support in various tasks. The following sections outline the student's specific involvement:

3.2 Software Development Unit

1. The student assisted in the development and testing of software applications tailored to the needs of clients.
2. Participated in the coding and debugging process, working with programming languages such as **JavaScript**, **Python**, and **PHP** under the guidance of the software development team.
3. Collaborated in the implementation of new features and functionalities based on client requirements.
4. Gained practical knowledge of software development frameworks and tools, as well as best practices for clean coding and software maintenance.

Skills Acquired:

- Enhanced coding skills and familiarity with different programming languages.
- Exposure to the software development lifecycle (SDLC) and project management tools.

3.3 Web Development Unit

- Assisted in designing and developing responsive websites for clients, ensuring that they met modern standards for user experience and functionality.
- Participated in the creation of web pages using **HTML**, **CSS**, and **JavaScript**.
- Supported the integration of front-end and back-end technologies for dynamic websites.
- Assisted in testing and optimizing websites for different devices and browsers, ensuring cross-platform compatibility.

Skills Acquired:

- Mastery of front-end web development technologies (HTML, CSS, JavaScript).
- Experience in website testing and troubleshooting for performance and compatibility.
- Knowledge of responsive web design and user interface (UI) principles.

3.4 Digital Marketing Unit

- Assisted in creating and managing digital marketing campaigns for clients, focusing on platforms like **Google Ads**, **Facebook Ads**, and **Instagram**.
- Contributed to the creation of content for social media, email marketing, and blog posts to boost online visibility and engagement.
- Analyzed website traffic and campaign performance using tools like **Google Analytics** and **SEMrush**, providing reports on key performance indicators (KPIs) such as reach, clicks, and conversions.
- Assisted in the execution of **Search Engine Optimization (SEO)** strategies to improve clients' website rankings and organic traffic.

Skills Acquired:

- Improved knowledge of digital marketing tools and platforms.
- Experience with SEO strategies, content marketing, and social media management.
- Ability to analyze marketing data and provide actionable insights for improving campaigns.

CHAPTER FOUR

4.0 INDUSTRIAL EXPERIENCE

During my Industrial Training (SIWES) at Solutech City Software Company, I had the opportunity to work hands-on with CSS, HTML, and JavaScript—three core technologies essential for modern web development. This experience was invaluable as it allowed me to transition from theoretical knowledge gained in the classroom to real-world application. In this chapter, I will share my personal experience and the skills I developed in these technologies during my time at the company.

4.1 Overview of My Training Experience

Throughout my internship, I was involved in several web development projects where HTML, CSS, and JavaScript played a pivotal role. I worked on both static and dynamic websites, contributing to various tasks, from designing web pages to adding interactivity and making the websites responsive. This exposure gave me a deep understanding of the entire web development process and helped me improve my technical and problem-solving skills.

4.2 My Experience with HTML (HyperText Markup Language)

During my internship, I learned how to structure web pages using HTML. It was my first experience putting together a complete website using the core building blocks of the web. Here's what I worked on:

1. Structuring Web Pages

I created the basic skeleton of several web pages using essential HTML tags like `<html>`, `<head>`, `<body>`, `<header>`, and `<footer>`. It was exciting to see how these simple elements came together to form a functional web page. I also learned how to organize content using more advanced HTML5 tags like `<section>`, `<article>`, and `<aside>`, making the pages more accessible and well-structured.

2. Creating Forms and Inputs

I worked on designing forms using HTML elements like `<input>`, `<textarea>`, and `<button>`. This gave me the chance to understand how websites collect user data and

how to build user-friendly forms for various purposes, such as contact forms and user registration.

3. Linking and Navigation

One of the tasks I worked on was creating navigation menus with anchor tags (`<a>`). I also linked to different web pages and embedded multimedia such as images and videos using HTML tags like `<img>`, `<video>`, and `<audio>`.

4. HTML Accessibility and SEO

I learned how important it is to make websites accessible for all users, especially those with disabilities. I made sure to use appropriate alt text for images and ensured proper use of semantic tags to improve accessibility. Additionally, I gained knowledge of SEO (Search Engine Optimization) techniques, ensuring the websites I worked on had the proper meta tags and structure to rank well on search engines.

What I Learned:

- How to build the structure of a website using HTML.
- The importance of accessibility and SEO in web development.
- How to create forms and handle user input.

4.3 My Experience with CSS (Cascading Style Sheets)

Next, I dove into CSS, which is used to style and lay out web pages. I learned how to transform simple HTML pages into visually appealing and responsive websites. Here's what I focused on:

1. Styling Web Pages

I gained experience in styling various elements such as text, buttons, images, and links. I experimented with different fonts, colors, margins, and padding to make the pages visually engaging. I also learned about CSS selectors and how to target specific elements on a page, making it easier to apply styles in a consistent way.

2. Box Model and Layout Techniques

Understanding the CSS box model was crucial for designing layouts. I learned how the content, padding, border, and margin interact to affect the spacing and alignment of

elements. I also got hands-on experience with Flexbox and CSS Grid, two powerful layout systems that helped me create flexible and responsive designs.

3. Responsive Design

One of the most exciting aspects of my work was learning how to make websites responsive. I used media queries to adjust the layout based on different screen sizes, ensuring that websites would look great on both desktop and mobile devices. I also used relative units like percentages, `em`, and `rem` to create flexible designs that scale smoothly.

4. CSS Animations and Transitions

I experimented with CSS animations and transitions, adding dynamic effects to buttons, links, and other elements. These small touches made the websites I worked on more interactive and engaging for users.

What I Learned:

- How to create responsive and visually appealing websites using CSS.
- Advanced layout techniques like Flexbox and Grid.
- How to use animations and transitions to enhance the user experience.

4.4 My Experience with JavaScript

Lastly, JavaScript was the scripting language I used to add interactivity and functionality to websites. This was my first deep dive into JavaScript, and it was incredibly rewarding to see the results in action. Here's what I learned:

1. DOM Manipulation

I worked with the Document Object Model (DOM), which allowed me to manipulate web page content dynamically. I learned how to use JavaScript to add, remove, and modify HTML elements on a page, making the websites more interactive. For example, I created buttons that, when clicked, would change the content of the page or show hidden elements.

2. Event Handling

I gained experience handling user interactions such as clicks, form submissions, and hover events. I learned how to trigger specific JavaScript functions when these events

occurred, allowing me to create interactive features like dropdown menus, image sliders, and dynamic form validations.

3. Writing Functions and Logic

I wrote several functions to handle different tasks, such as form validation and dynamically updating content. I also practiced using conditional statements (`if, else`) and loops (`for, while`) to control the flow of the website based on user actions.

4. Asynchronous JavaScript

I was introduced to AJAX (Asynchronous JavaScript and XML), which allowed me to fetch data from external sources and update the web page without refreshing it. I learned how to use Promises and `async/await` to handle asynchronous operations more efficiently.

5. Integrating with APIs

I also explored how to integrate third-party APIs into websites. I worked with JSON data to display information from external sources like weather forecasts or news updates, which I fetched asynchronously using JavaScript.

What I Learned:

- How to add interactivity to web pages using JavaScript.
- The importance of asynchronous programming and working with APIs.
- How to manipulate the DOM and handle user interactions.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Attachment Activities

During my Industrial Training (SIWES) at Solutech City Software Company, I gained practical experience in web development, focusing on HTML, CSS, and JavaScript. I was involved in multiple web development projects, where I contributed to the creation of user-friendly websites by structuring web pages using HTML, styling them with CSS, and adding interactivity through JavaScript. This experience allowed me to apply theoretical knowledge gained in school to real-world projects, enhancing my skills in web design, responsive layouts, and dynamic content. I also learned to integrate external APIs and work with JavaScript for user interactions, event handling, and form validation. Through this hands-on work, I developed a deeper understanding of web development processes and strengthened my technical abilities.

In addition to technical skills, I gained valuable experience working in a collaborative environment. I worked alongside project managers, software developers, and training coordinators, which helped me understand the importance of teamwork and communication in achieving project goals. The mentorship I received throughout the training was instrumental in refining my skills and learning industry best practices. Overall, my attachment at Solutech City Software Company provided me with the opportunity to grow as a developer, preparing me for future challenges in the tech industry while building a solid foundation for my career.

5.2 Problems Encountered During the Program

During my Industrial Training (SIWES) at Solutech City Software Company, I encountered a few challenges that initially hindered my progress. One of the main issues was the steep learning curve with some of the advanced features of CSS and JavaScript. While I had a basic understanding of these technologies, applying them in real-world projects, especially when dealing with complex layouts and interactivity, proved to be more challenging than I anticipated. I struggled with mastering responsive design techniques, especially using CSS Grid and Flexbox, and had difficulties debugging JavaScript code when integrating APIs and handling

asynchronous tasks. This slowed down my work at times and required additional time and effort to overcome.

Another challenge I faced was adapting to the fast-paced work environment and meeting tight project deadlines. As I was working on multiple tasks simultaneously, managing time effectively became crucial. There were instances when I found it difficult to balance learning new concepts, writing code, and ensuring the quality of the work, especially when faced with unexpected issues such as browser compatibility or troubleshooting complex bugs. However, with the guidance and support from my mentors, I was able to work through these challenges, improve my problem-solving abilities, and develop a better understanding of real-world web development processes.

5.3 Suggestions for the Improvement of the Scheme

To improve the effectiveness of the Industrial Training (SIWES) scheme, I would suggest the following recommendations based on my personal experience:

Firstly, providing more structured training programs or pre-internship tutorials in core technologies such as HTML, CSS, and JavaScript would help interns hit the ground running. Many interns, like myself, had some foundational knowledge, but a more in-depth, hands-on introduction to the latest tools and frameworks used in the industry could improve their confidence and productivity. Offering a blend of theoretical and practical training before the actual internship could better prepare students for real-world challenges and reduce the initial learning curve.

Secondly, enhancing the mentorship aspect of the program could significantly improve its impact. Assigning each intern a dedicated mentor who can provide regular feedback, guide them through complex tasks, and offer personalized learning opportunities would be beneficial. Regular check-ins between the interns and their mentors could ensure that any issues are addressed promptly, helping interns stay on track with their development and contribute more effectively to the projects. Additionally, organizing group discussions or workshops where interns can share experiences and problem-solving strategies might foster a more collaborative and supportive learning environment.