UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING

INDUSTRIAL TRAINING REPORT

EARLY WARNING SYSTEM(EWS) FOR FLOOD PREDICTION APPLICATION (WEB DEVELOPMENT)

By

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BACHELOR OF COMPUTER SCIENCE

(GRAPHIC AND MULTIMEDIA SOFTWARE)

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I would like to thank my company supervisor, Encik Jaafar Bin Nordin, Head of Operations at Eftech Energy Solution Sdn. Bhd., for his invaluable advice, mentorship, and unwavering support throughout my industrial training program. His insights and encouragement have helped shape my learning experience. I'd also like to express my heartfelt gratitude to my co-supervisor, Fatin Nadiah, and my team leader, Amirul Adli, for their continuous support, particularly with technical issues and coding. Their knowledge, patience, and willingness to help have been critical in guiding me through challenges and developing my skills during this internship.

My sincere appreciation also goes to my colleagues, whose collaborative spirit and openness to sharing knowledge made my journey both rewarding and enjoyable. Their professionalism and kindness have left a lasting impression and have greatly enriched my personal and professional growth. To my fellow trainees, I am incredibly thankful for the camaraderie, teamwork, and shared experiences that made this journey truly memorable. The bonds we have built over these five months will always hold a special place in my heart.

Lastly, I want to extend my deepest appreciation to my family, who have been my constant source of strength and encouragement throughout this journey. Their belief in my abilities and unwavering support have motivated me to keep striving for excellence. Completing this industrial training program has been a significant milestone, and I am profoundly grateful to everyone who has played a part in making it a transformative and meaningful experience.

ABSTRACT

This report outlines the industrial training experience at Eftech Energy Solutions Sdn. Bhd., with a focus on the development of a web application for an early warning system, which forms a crucial component of the company's flood prediction system. This project is categorized as an internal initiative, as it represents a new product currently in the research and development (R&D) phase. Additionally, the report highlights the involvement in minor tasks related to operational support, which complemented the primary responsibilities during the internship.

The training provided a comprehensive exposure to various technical and organizational tasks, spanning from research to development. This experience offered valuable opportunities to enhance skills in both research methodologies and software development. Beyond technical work, the training also included responsibilities such as IT setup, device configuration, and data management within the company's records. These tasks provided insights into operational workflows and organizational processes, offering a well-rounded understanding of the challenges and practices in a real-world professional environment.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

UTM	-	Universiti Teknologi Malaysia
ORM	-	Object Relational Mapping

LIST OF SYMBOLS

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

Industrial training gives students hands-on experience in real-world work settings, which helps bridge the gap between theoretical knowledge and practical application. It enables students to apply what they've learned to real-world projects while also developing important soft skills such as communication, teamwork, and problem-solving. This experience not only improves technical skills but also prepares students for future careers by exposing students to industry standards, practices, and workplace culture.

1.2 Organization Background

Eftech Energy Solutions Sdn Bhd, formerly known as Eftech Drilling Solutions, is a 100% Malaysian-owned company that provides directional drilling, measurement while drilling (MWD), and logging while drilling (LWD) services to the oil and gas industry. Eftech was founded in response to Malaysia's Economic Transformation Plan, and it provides advanced drilling solutions on its own, without relying on external service providers. The company collaborates closely with leading manufacturers of DD and MWD technologies to support a wide range of exploration projects throughout Malaysia and Asia Pacific.

Eftech Energy Solutions is a member of the Eftech Group of Company, provides comprehensive drilling operations and asset integrity management solutions based on over 15 years of experience. They provide pre-commissioning, maintenance, nitrogen purging, leak testing, chemical cleaning, and digital transformation via software and application solutions.

In keeping with their commitment to industry advancement, Eftech has created nine commercial software solutions that address critical industry challenges while improving operational efficiency and data management. These software solutions support Eftech's system integration and digital transformation initiatives by providing specialized tools for process automation, data management, and predictive maintenance in drilling and production processes. Eftech's technical and digital transformation services are designed to assist in all project stages from planning to execution with customized software platforms that enhance data accessibility and operational insights.

The organization’s structure integrates specialized teams in real-time operation (RTOC), well engineering, QAQC, Technical data management and digital transformation and software application development, positioning it as a critical partner for energy companies seeking efficient, reliable, and cost-effective solutions.

1.1 Company logo

1.3 Organization Structure

Eftech Energy Solution is led by a three-member Board of Directors, with Dato' Mahathir Samat serving as Group CEO and Executive Chairman. Eftech Energy Solutions is led by Ts. Sa'aid Hazley Abdul Talin, CEng, as Managing Director, and Eur Ing Ts. Mohamad Sukor Zainal Abiddin, CEng, as Executive Director. These leaders oversee multiple departments, ensuring that the company's operations are in line with its strategic objectives.

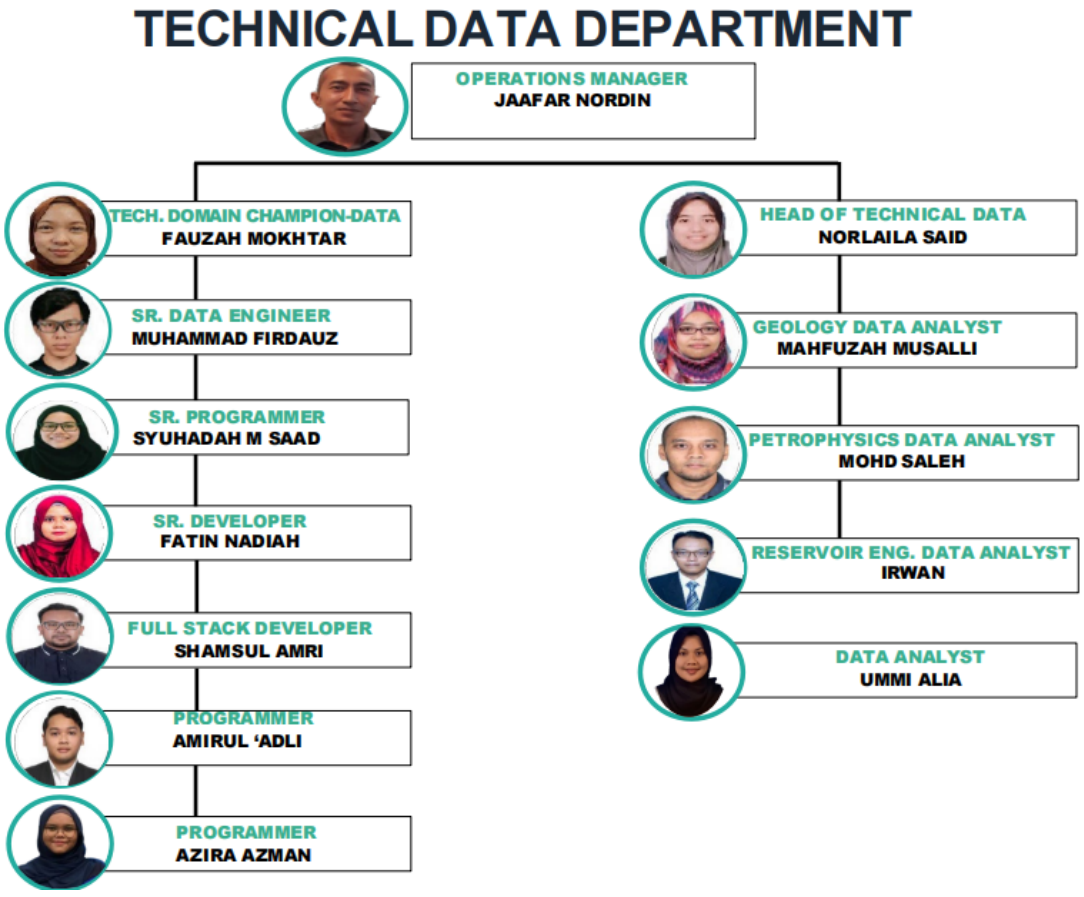
1.2 Board of Director

The Technical Data Department at Eftech Energy Solutions is led by Operations Manager Encik Jaafar bin Nordin, who also oversees the internship program. Encik Jaafar bin Nordin is responsible for ensuring the department's efficiency and overseeing the interns' progress, providing guidance throughout their training. He can be reached via email at jaafarn@eftech.com.my or phone at +60133333658.

Within the Technical Data Department, responsibilities are divided between two specialized teams: the Development Team and the Data Analyst Team. The Development Team, which includes developers and programmers, is responsible for designing and maintaining client-oriented software systems. Their primary responsibilities include developing new software solutions and ensuring the maintenance of company software to meet changing client needs and maintain operational efficiency.

As part of the Technical Data/ Operation Support internship program, assignments were completed by the Development Team, which was led by Senior Developer Fatin Nadiah, who provided technical leadership and project guidance. Programmer Amirul 'Adli also helped the team implement various tasks and foster a

collaborative learning environment. This arrangement provided structured mentoring and hands-on experience in software development within the Technical Data Department.



1.3 Technical Data Department

1.4 Job scope of internship

The internship commenced with responsibilities as a Software Tester, where the primary focus was assisting the development team with a range of quality assurance tasks. These included unit testing, functionality testing, integration testing, and end-to-end testing, all performed using Katalon Studio. The role extended beyond executing test cases to meticulously documenting testing procedures and outcomes, ensuring clear, comprehensive, and accessible records. This initial phase

provided valuable insights into the software testing lifecycle and the importance of maintaining high-quality standards in development.

However, due to internal restructuring, the supervisors decided to shift the interns' job scope, assigning us to contribute to the company's new product development initiative. This led to involvement in the flood prediction project, specifically focusing on the research, design, and development of a web application for an early warning system. As part of a product still in its R&D phase, this project offered a unique opportunity to engage in end-to-end development tasks, from conceptualization to implementation. This shift in responsibilities not only provided valuable hands-on coding experience but also significantly enhanced technical skills in areas such as web application development. The opportunity to work on such an innovative and impactful project allowed for professional growth and a deeper understanding of real-world software development processes.

Additionally, the internship provided practical exposure to IT setup and operational support, involving tasks such as configuring new laptops, bypassing system issues, and manually installing essential. These responsibilities required attention to detail and problem-solving skills, ensuring seamless IT operations within the company. Furthermore, administrative tasks such as managing and updating company records in Google Sheets added another layer of valuable experience, reinforcing organizational and data management skills. These combined responsibilities provided a well-rounded training experience, enhancing technical, operational, and administrative capabilities while broadening understanding of development and workplace processes.

1.5 Conclusion

To summarize, the industrial training experience at Eftech Energy Solutions Sdn Bhd has been invaluable in bridging the gap between theoretical knowledge and

practical application. Throughout the internship, I was exposed to a variety of technical and operational tasks, which greatly improved my skills in software development, quality assurance, IT setup, and administrative functions. Working on the flood prediction project allowed me to contribute to the company's innovative product development efforts while also gaining hands-on experience in research and coding. Mentorship and guidance from supervisors and colleagues have not only broadened my technical knowledge but also assisted me in developing important soft skills such as problem solving, teamwork, and communication. Overall, this industrial training has been an important step in my professional development, providing me with the tools and knowledge I need to succeed in the fields of software development and technology.

CHAPTER 2

2.1 Introduction

This chapter will discuss the projects and tasks assigned during the industrial training period. This will include a brief explanation of the project, as well as the software and equipment used to complete the project and tasks.

2.2 Objective of Project/ training

The primary goal of the internship at the Technical Data/ Operational Support Department is to assist with the research and development of the EWS (Early Warning System) web application, part of flooding prediction system project. Furthermore, the internship entails assisting with side projects to apply and enhance professional skills, thereby improving the overall quality of contributions to the organization.

The specific goals of the project and training are as follows:

1. Research and development: Assist to research and develop a practical and efficient EWS (Early Warning System) application that meets both technical and user requirement.

2. Create visually appealing and creative digital media material for company to increase engagement and communication.

3. Documentation Development: Create Standard Operating Procedure (SOP) documentation to streamline and standardize internal processes.

4. System Setup and Maintenance: install and configure computer hardware and system to ensure operational readiness and efficiency.

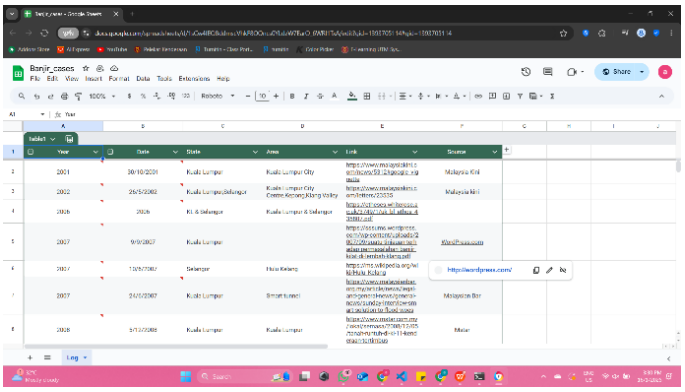
These objectives seek to develop a diverse skill set in web development, creative content creation, documentation, and IT system management.

2.3 Type of work done

This section will elaborate type of work done during the internship.

2.3.1 Research and Analysis

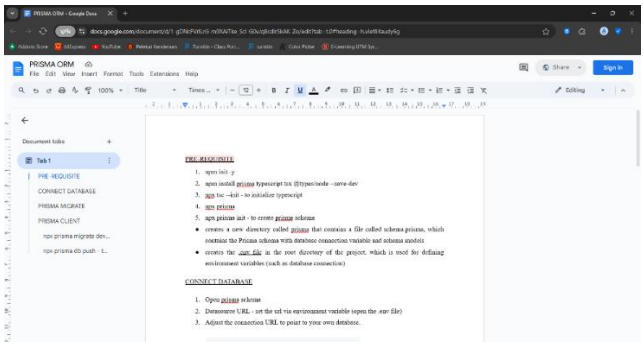
Before initiating the development of the EWS (Early Warning System) Application, the project began with an extensive research phase. This phase focused on collecting and analysing flooding data in specific areas of Kuala Lumpur, Malaysia, to understand the causes and patterns of flooding. This theoretical research was essential for creating a reliable dataset to train the machine learning model, forming the foundation for the application's predictive capabilities.



2.1 Research Example: Flood Data

Practical knowledge was also emphasized during this stage, as the research team evaluated various tools, technologies, and methodologies for implementation. Under the guidance of Programmer Amirul ‘Adli, interns played a significant role in identifying optimal solutions that would enhance the application's performance and ensure smooth development. This included considering factors like scalability, ease

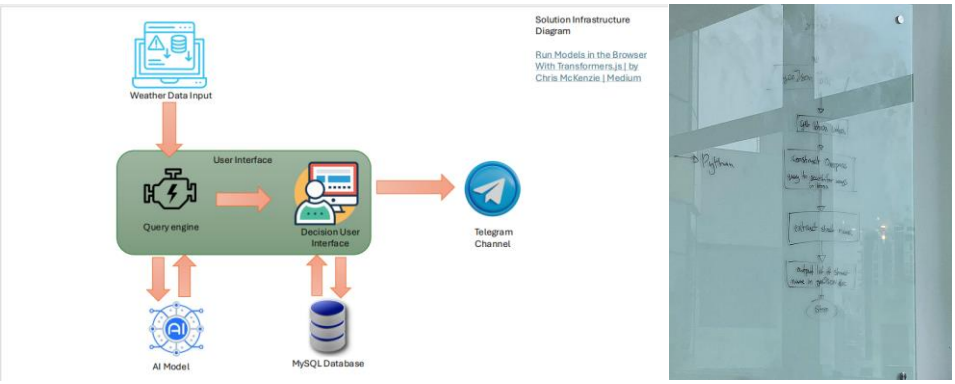
of use, and compatibility with future system updates, ensuring that subsequent programmers could manage and build upon the code effectively after the internship period.



2.2 Documentation Example: Prisma ORM

During the research and development process, several challenges arose, including data availability and quality issues, as well as selecting the most efficient technologies within time constraints. These challenges provided an opportunity to develop general skills such as problem-solving, teamwork, and decision-making. The team addressed these problems by collaborating closely, conducting thorough comparisons of tools, and iteratively refining the selected approaches.

In terms of implementation management, the team ensured structured planning by documenting all decisions regarding tools, methods, and procedures. This documentation included coding standards, system architecture, and workflow guidelines, which will serve as a reference for future developers. By combining theoretical insights, practical applications, and effective problem-solving, the project established a strong groundwork for the successful development of the Flood Prediction Application.

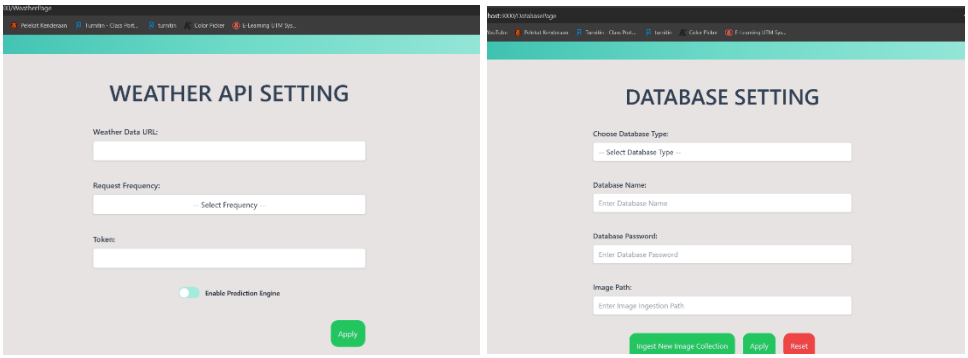


2.3 Structure planning example

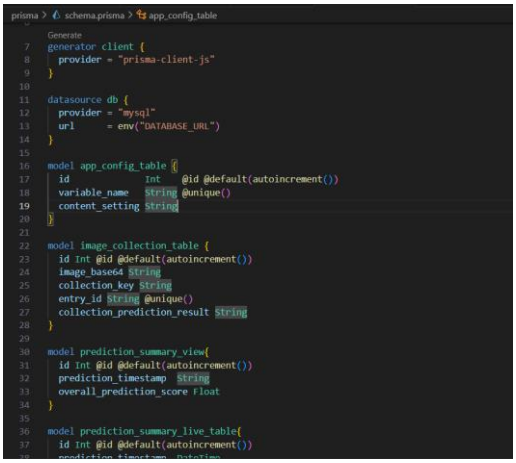
2.3.2 Web development

The primary objective throughout the internship was to implement the EWS (Early Warning System), with a focus on web development. The project provided participants with a unique opportunity to join the development team from the outset, as it began a month after the internship started. This collaboration provided software developers with valuable insights into industry procedures and workflows.

Under the supervision of Programmer Amirul Adli, the interns successfully completed the frontend of the EWS (Early Warning System) and the backend database is still in progress. Theoretical knowledge applied includes current web development, database management, and software engineering techniques, such as using TypeScript to write robust JavaScript code and Solid.js to create reactive user interfaces. For database management, the team used Prisma ORM, which automated the process of writing SQL queries. Furthermore, practical experience included debugging, optimizing code, and understanding the lifecycle of web application development.



2.4 UI example



2.5 Coding example: prisma migration

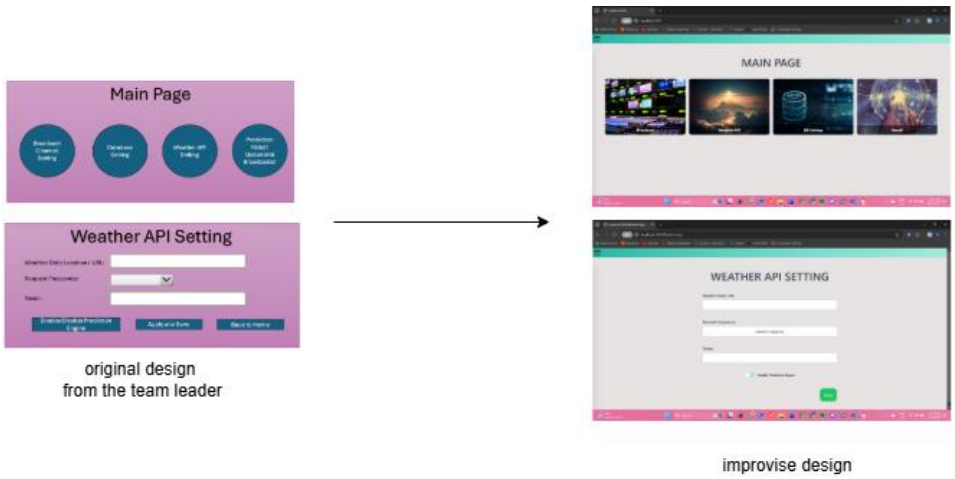
Despite these gains, obstacles arose throughout assignment execution, particularly when learning and integrating foreign technology under tight timelines. Adapting to tools like Solid.js and Prisma ORM requires extensive research and practice. Time management and excellent communication were key for overcoming these obstacles.

Although only the engineer develops the machine learning model for flood prediction and the interns but we still given theoretical and practical insights into how it works. This involved figuring out how the model was trained, tested, and connected into the backend system.

In terms of implementation management, the project was tackled methodically. The team documented coding standards, procedures, and system architecture to assure the application's continuity and maintainability. Collaborative efforts stressed general skills like problem-solving, teamwork, and adaptability, which were essential for completing project requirements and timelines. This extensive experience in theoretical application and practical implementation provides invaluable insights into the dynamics of professional software development.

2.3.3 Design

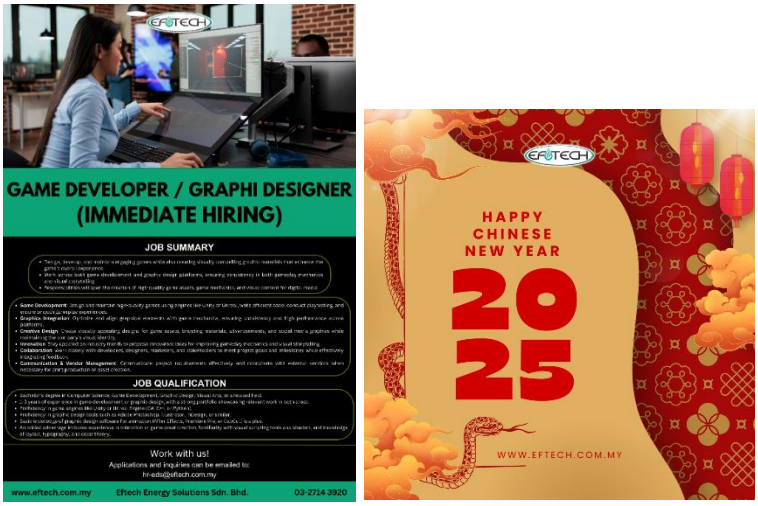
During the design phase, the team lead entrusted us with the responsibility of creating the UI design for the web application prototype. We were granted creative freedom in this task, provided that the design incorporated key elements of the company's identity, such as its signature colours. This opportunity allowed us to explore various design strategies while ensuring consistency with corporate branding, offering valuable insights into the importance of branding in application development.



2.6 UI design example

Additionally, the management team assigned interns with the digital media design task which focus on design posters for special occasions, such as Deepavali, New Year and even the vacancy poster for new position as well as create the video

documentation for any activities. While this activity may not directly relate to computer science, it significantly enhanced creative and critical thinking skills. These tasks involved balancing creativity with formal corporate requirements, as the posters needed to adhere to a specific professional format suitable for the corporate environment.



2.7 Poster design example

The poster design assignments also improved skills in visual communication and attention to detail, which are transferable to broader fields, including UI/UX design. Overall, these experiences highlighted the role of creativity and branding in delivering effective and cohesive designs in both technical and non-technical tasks.

2.3.4 Computer software installation

An opportunity arose to work on a computer installation project with two interns and a staff member leading the configuration phase. This task was prompted by the company's decision to provide 40 new laptops to consultants hired for a data governance project, allowing them to work remotely. These laptops were unconfigured, requiring extensive configuration to prepare them for secure and efficient use.

The task required applying theoretical knowledge of operating system configuration, software installation protocols, and IT security best practices. Practical implementation included configuring the operating system, installing necessary software, and deploying tools like Miradore for device management and URC access mode for secure remote access. These measures provided centralized control over the laptops, addressing concerns about access and security.

This task required troubleshooting installation errors, managing time to meet deadlines, and ensuring uniform configurations across all devices. Furthermore, adapting to unfamiliar software necessitated on-the-spot learning and problem solving. The task improved general skills like team collaboration, communication, and task management.

The implementation process was methodical, with a step-by-step checklist to ensure that all devices were properly configured before deployment. This experience provided valuable insights into IT operations, combining technical knowledge with practical application to deliver a secure and efficient solution for a large-scale project.

2.8 Computer Configuration

2.4 Hardware and software used

During the internship, I got a chance to work with a variety of innovative platforms and tools. Each of these was essential in increasing productivity and helping in completion of various tasks. The hardware and software needed for the projects is specified in this section.

2.4.1 Hardware used

Table 2.1 outlines the hardware specifications employed during the internship.

Component	Specification
Processor	AMD Ryzen 7 6800H with Radeon Graphics
Memory	16.0 GB RAM
Graphics Card	NVIDIA GeForce RTX 3050
Input Medium	Keyboard, Mouse
Output Medium	Monitor Screen

Table 2.1 Hardware Used

2.4.2 VSCode

Visual Studio Code (VS Code) was chosen as the primary Integrated Development Environment (IDE) for this project due to its user-friendly interface and extensive feature set. The user-friendly interface and real-time error checking increase coding efficiency. VS Code is a versatile code editor that supports a variety of programming languages and frameworks. It also includes a dependable debugger, which allows developers to step through code, inspect variables, and troubleshoot

problems. VS Code's extensive extension library enables seamless integration with a wide range of tools and workflows, making it an invaluable tool for increasing productivity and simplifying software development processes.

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2.9 VSCode logo

2.4.3 SolidJS

SolidJS was instrumental in the development of the project's frontend, providing a modern, efficient framework for creating reactive user interfaces. Its fine-grained reactivity enabled smooth state management and optimized rendering, making the application extremely responsive and dynamic. SolidJS provided a lightweight but powerful solution for handling real-time updates and ensuring user-friendly interactions. Its performance-oriented design proved extremely effective, allowing the creation of a fast and reliable web application that met modern development standards.

2.10 SolidJS logo

2.4.4 Taildwind CSS

Tailwind CSS was used to create an aesthetically pleasing and responsive user interface. Its utility-first approach streamlined the styling process by allowing classes to be applied directly to elements, accelerating prototyping and customization. This made creating consistent, professional-looking components simple and effective. Tailwind also ensured that the application looked great on all screen sizes, providing a consistent experience for users across multiple devices. The built-in design tokens, such as colours and typography, helped maintain a consistent look throughout the project, ensuring the interface matched the project's design goals perfectly.

2.11 Taildwind CSS logo

2.4.5 TypeScript

TypeScript and SolidJS were combined to add structure and reliability to the codebase. TypeScript enforces type safety, which helps catch potential errors early in the development process, making the code more predictable and robust. It also improved debugging and collaboration by clearly defining variable types and object structures. This increased the team's confidence when implementing new features or making changes. Aside from that, TypeScript made the code easier to maintain and scale, which is critical for long-term growth. It was an important tool for keeping the project organized and adhering to industry best practices.

2.12 TypeScript logo

2.4.6 Prisma ORM

Prisma ORM is a powerful tool for handling database interactions in a modern, developer-friendly manner. It acts as an abstraction layer, simplifying database access through an intuitive, schema-driven approach. Prisma reduces error rates and improves code maintainability by automatically generating type-safe database queries. It supports migrations, relationships, and complex queries with ease, making it ideal for projects that require strong database management. Furthermore, its compatibility with popular relational databases and integration with JavaScript and TypeScript increases productivity.

2.13 Prisma ORM logo

2.4.7 AGGrid

AG Grid is a high-performance data grid solution developed for applications that require efficient handling of large datasets. Its extensive set of features includes sorting, filtering, grouping, and advanced data visualization, allowing developers to create complex and interactive data tables with little effort. The grid's compatibility with various frameworks such as React, Angular, and Vue makes it a versatile choice for a wide range of projects. AG Grid is also customizable, allowing for tailored

functionalities such as row editing, cell formatting, and dynamic updates, making it an invaluable tool for developing data-intensive applications with an easy-to-use interface.

2.14 AGGrid logo

2.4.8 Storybook

Storybook is a UI development tool that enables developers to create, test, and showcase individual components separate from the main application. This approach ensures that each component works properly before integration, lowering the risk of bugs and improving code quality. Storybook encourages collaboration among developers, designers, and stakeholders by providing a visual interface for reviewing and testing components across various states and configurations. Its compatibility with popular frontend frameworks, as well as support for add-ons such as accessibility checks and design tools, help to streamline the development process and ensure consistency and efficiency when creating cohesive user interfaces.

2.15 Storybook logo

2.4.9 DBeaver

DBeaver served as the primary database management tool, requiring both theoretical and practical knowledge of computer science and information technology, particularly database management systems (DBMS) and SQL. It facilitated the

efficient execution of complex queries, data import/export, and data structure visualization using ER diagrams. One major challenge was optimizing performance when dealing with large datasets, which necessitated the use of performance tuning techniques like indexing and query optimization. The task execution required critical problem-solving abilities, time management, and analytical thinking to ensure effective database management throughout the project. DBeaver integration into the workflow enabled smooth task implementation and management, which contributed significantly to the project's success.

2.16 DBeaver logo

2.4.10 Canva

During the internship, Canva was the primary design tool for producing visual assets and presentations. The tool's user-friendly interface and extensive template library allowed for the efficient creation of high-quality graphics, presentations, and marketing materials. Theoretical knowledge of graphic design principles and visual communication was used to ensure that designs met project requirements while also being visually appealing. Maintaining consistency across multiple design elements was a challenge, but it was overcome by using Canva's brand kit feature to standardize fonts, colours, and logos. To meet deadlines, the task required creativity, attention to detail, and effective time management, all of which contributed to the project's successful implementation of design assets.

2.17 Canva logo

2.4.11 Adobe Illustrator

Adobe Illustrator was used to create and edit vector-based designs, especially high-quality visuals like posters, banners, and event materials. The tool's advanced features, such as its precision in handling shapes, paths, and typography, were critical for creating detailed and scalable graphics. Theoretical knowledge of graphic design principles, vector graphics, and typography were used to ensure that designs were both aesthetically pleasing and functional. Mastering Illustrator's more complex tools and features proved to be a challenge, but it was overcome through continuous practice and tutorial exploration. This task required creativity, technical proficiency, and problem-solving abilities to ensure that the final designs met the project's goals and contributed to the overall visual communication strategy.

2.18 Adobe Illustrator logo

2.4.12 Microsoft Office

Microsoft Office was used extensively for a variety of tasks such as documentation, data analysis, presentations and even for communication. Microsoft Word and Excel were critical for creating reports, preparing documentation, and analysing project data using features such as pivot tables and data visualization. To streamline workflows and ensure efficient document management, computer science and information technology students applied their theoretical knowledge of data organization, document formatting, and office productivity tools. Maintaining consistency in large data sets proved difficult, but Excel's data validation and conditional formatting features were used to overcome this. Strong organizational skills, attention to detail, and effective time management were required for the task, which contributed to the project's documentation and reporting being completed and managed successfully. Outlooks and teams are the main platform for virtual communication like email and online meeting.

2.19 Microsoft Office logo

2.5 Gantt Chart

ACTIVITY	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
Objective																				
Planning																				
Objective Refinement																				
Research and Development																				
Identify Tooling																				
Identify Technology																				
Identify Method																				
Implementation																				
Base																				
Product																				
Testing																				
Unit Test																				
Functionality																				
Integration																				
E2e																				
Demo																				

2.20 Gantt Chart Flood Prediction Project

2.6 Conclusion

The industrial training period at the Technical Data/Operational Support Department was a diverse and enriching experience that covered many aspects of software development, IT operations, and creativity. From researching and developing the Early Warning System web application to designing digital media and configuring IT systems, each task provided an opportunity to apply theoretical knowledge in real-world settings. Challenges like integrating new technologies, managing time, and troubleshooting issues honed problem-solving, teamwork, and communication abilities.

The internship provided invaluable insights into professional workflows and best practices by giving students hands-on experience with modern tools and technologies such as Prisma ORM, SolidJS, and Tailwind CSS, as well as collaborative efforts with mentors and teammates. These experiences not only improved technical skills but also provided a comprehensive understanding of workplace dynamics and industry standards, laying the groundwork for future professional endeavours.

CHAPTER 3

3.1 Knowledge Acquisition and Mentorship Insight

Throughout my internship at Eftech Energy Solutions Sdn Bhd, I had the opportunity to learn in-depth about web application development under the guidance of Mr. Amirul Adli. He was instrumental in introducing me to new frameworks and tools required for developing maintainable and scalable web applications. Despite managing his own projects, Mr. Amirul provided consistent guidance throughout the learning and implementation phases, ensuring that I fully understood the concepts and techniques involved. His mentoring greatly accelerated my understanding of web development practices, allowing me to apply them effectively to system development tasks. This experience demonstrated the value of mentorship in promoting professional development and technical skill acquisition in a dynamic work environment.

Furthermore, Miss Fatin Nadiah provided invaluable insights that expanded my critical thinking and deepened my understanding of operational assurance and product quality. Her advice on software testing emphasized its critical role in preventing potential problems for users. She emphasized the importance of thorough testing and quality control in producing dependable and user-friendly applications. Her encouragement reinforced my belief in the importance of rigorous testing protocols in the software development lifecycle.

Finally, I'd like to express my heartfelt gratitude to Encik Jaafar, whose mentorship and supervision were invaluable throughout my internship experience. Beyond his professional responsibilities, Encik Jaafar created a positive and supportive work environment that encouraged collaboration and camaraderie. His dual role as mentor and supervisor was critical to my development, assisting me in navigating challenges and making the most of my learning opportunities. His contributions greatly enriched my internship and provided a solid foundation for my future career.

3.2 Task Performance Evaluation and Constructive Feedback

Overall, task performance during the internship at Eftech Energy Solutions showed a strong dedication to learning, adaptability, and determination. Core tasks like conducting research and developing the web application helped me improve my technical skills, such as programming and debugging, as well as my problem-solving and critical thinking skills. In addition, side projects like creating and designing posters helped me improve my creative thinking and design skills. Furthermore, hardware maintenance activities such as computer configuration helped me broaden my knowledge and skills in hardware management. These diverse responsibilities provided a well-rounded learning experience, benefiting both my technical and professional development.

The industrial training program provided valuable learning opportunities, but there is still room for improvement to make the overall experience better for future interns. Clearer onboarding processes and structured training schedules would help new interns adjust to their roles and responsibilities more quickly. Regular check-ins with supervisors may provide additional guidance while ensuring consistent progress throughout the program. While exposure to a wide range of tools and tasks was beneficial, more hands-on experience with complex technologies such as Prisma ORM and SolidJS could help to deepen technical understanding. Encourage open communication and provide more opportunities for feedback to foster a collaborative environment and help interns contribute more effectively. Overall, the experience was extremely beneficial, however, these improvements could make the training even more effective.

CHAPTER 4

CONCLUSION

4.1 Overall Achievement of Industrial Training

My overall achievement during the industrial training reflects significant growth in both technical abilities and professional development. Completing 70% of development of early warning system web application enabled me to gain deeper knowledge in web application development. Conducted various research during the r&D phase and documented enhance my skills in data collection. Additionally, honing my communication skills through joining company events and help other co-worker from various department enhanced my ability to interact effectively with diverse groups.

These experiences have equipped me with the confidence and expertise needed for future professional challenges. Throughout this internship, I also gained valuable insights into transitioning from university to the working world and learning about the difference expectations between bosses and lecturers.

4.1 Oil & Gas Exhibition 2024

4.2 Breakfast with Executive Director

4.2 Issue and Challenge During Industrial Training

One of the most difficult aspects of the internship was adjusting to self-directed learning while researching and using new frameworks, databases, and technologies. Supervisors provided guidance and support, but the teaching style differed from the structured approach commonly used by lecturers in the classroom. Understanding and applying new concepts effectively necessitated a high degree of independence, initiative, and problem-solving abilities.

Another challenge was managing multiple responsibilities. In addition to development work, management occasionally delegated administrative or HR responsibilities. Balancing these various responsibilities required effective time management to ensure that all tasks were completed before the deadline.

Balancing internship duties with academic obligations added an extra layer of complexity. This semester, the faculty enrolled me in the PSC course, which required weekend participation and Friday tests. To attend these sessions, I needed to obtain permission from my supervisor and rearrange my schedule to accommodate both academic and internship responsibilities.

These challenging experiences helped me improve my time management skills, adapt to new roles, and take a more resilient and proactive approach to professional and academic responsibilities.

4.3 OPINION & SUGGESTION

Future industrial training programs could benefit from being scheduled during the final semester of the academic curriculum rather than one semester before graduation. This change would give students the opportunity to apply their most recent knowledge and skills in a practical setting, thereby improving their job readiness.

By conducting the industrial training during the last semester, students can experience a seamless transition from academic studies to professional roles. This approach ensures that their academic learning is immediately relevant to the tasks they undertake during the training, boosting both their confidence and employability. Furthermore, it facilitates smoother integration into the professional environment, enabling students to adapt and contribute effectively from the outset.

For employers, this adjustment means onboarding interns who are better prepared and up to date with the latest industry-relevant knowledge, resulting in quicker adaptability and productivity. This alignment between academia and industry fosters mutual benefits, bridging the gap between theoretical education and practical application in a structured, timely manner.

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APPENDICES

Appendix A

Sekretariat Latihan Industri
Fakulti Komputeran,
Universiti Teknologi Malaysia,81310 SKUDAI, JOHOR
Fax: 07-5565044 Tel: 07-5532008

INDUSTRIAL TRAINING ACHIEVEMENTS

(This form must be filled by student and must be attached in the Industrial Training report)

Student's Name : NUR SYUHAIDA BINTI ZAWAWI

Organisation : EFTECH ENERGY SOLUTION SDN. BHD.

No.	Task (List all tasks have been completed)	Month of Task Achieved				
		Month 1	Month 2	Month 3	Month 4	Month 5
1.	Research and Documentation					
2.	UI Design (EWS)					
3.	Web development (EWS)					
4.	New laptop configuration					
5.	Training activities					
6.	Digital media design					
7.	Technical Event Crew					

Deliverable/Training reflection (Outcomes that have been achieved)
1. Designed, created, and delivered digital media materials, such as posters and videos, for various purposes, including product promotion, job vacancy announcements, and celebration events,

enhancing skills in creativity and critical thinking.

2. Conducted problem-based research, documented all findings, and delivered them to the relevant person to ensure materials are preserved and accessible for future use, demonstrating strong problem-solving and critical thinking abilities.

3. Designed user interfaces for web applications with a focus on user experience, ensuring that non-technical users could easily navigate and understand the system.

4. Conducted research and development for web application systems based on industry requirements, utilizing new frameworks and tools to enhance technical and coding skills.

5. R&D the web application system based on industry requirement and using new framework and tools enhance my skills in tehcnical and coding skills.

6. Supported the operation team by configuring hardware and performing system setups, gaining practical technical skills in the process.

7. Assisted the operations department with tasks such as inventory checks, sourcing, and booking training facilities, showcasing the ability to multitask and efficiently manage various responsibilities.

Student Signature:  Date: 27 / 1 / 2025

Approval

Organisation's Supervisor:

.....

(Signature)

Name: JAAFAR NORDIN

Date: 27/1/25

Faculty Supervisor :

.....

(Signature)

Name: DR SURIATI BINTI SADIMON

Date: 7/2/25

Appendix B

INDUSTRIAL TRAINING CHECKLISTS (PLACEMENT)

No.	Activities/Tasks	Tick (√)	Endorse by and date
1.	Report Duty To The Organization Approved by faculty	√	2nd Sept 2024
2.	Perform Report Duty Verification on ITS, verified by organization supervisor.	√	9th Sept 2024
3.	Contact faculty supervisor to inform the job scope and organization information	√	22nd Oct 2024
4.	*Update of Industrial Training site (address). Inform faculty supervisor and JKLI, if any changes.*	-	-
5.	Updating Industrial Training Logbook online – daily basis	√	-
6.	Ensure that the organization supervisor is able to login to ITS successfully (Organization supervisor gets ITS userid and password).	√	9th Sept 2024
7.	Faculty Supervisor Visit. Date (physical): 23 / 1 / 2025	√	23rd Jan 2025
8.	Industrial Training Presentation.	√	23rd Jan 2025
9.	Performance evaluation by organisation supervisor in ITS	√	27th Jan 2025
10.	Submission of Industrial Training Logbook.	√	30th Jan 2025
11.	Submission of Industrial Training Report with checklist and achievement form as Appendix.	√	30th Jan 2025
12.	Fill in Industrial Training Performance Evaluation by student in ITS.	√	27th Jan 2025
13.	End Industrial Training	√	7th Feb 2025
14.			
15.			

Note:
1. *Italic activities are optional depending on student situation.*

IIMPORTANT: This checklist must be put as attachment in the industrial training report.