



## PRACTICUM FINAL REPORT

Submitted by:

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**Bachelor of Science in Computer Science**

Host Company:

***PetroEnergy Resources Corporation***

Practicum Period:

**April – July 2025**

**Mapúa Malayan Colleges Laguna**

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## Overview of the Practicum Engagement

### Company Background



*Figure 1.* PERC Logo

PetroEnergy Resources Corporation (PERC) is a leading Filipino energy company under the Yuchengco Group of Companies which was founded in 1994. PERC is recognized for the strategic investments of the company in both conventional and renewable energy sectors, with a firm commitment to sustainability and innovation. The company head office is located in Ortigas, Pasig City, while the company operates across multiple energy domains including oil exploration, geothermal, wind, and solar power generation.



*Figure 2.* Companies under PERC

PetroEnergy has a wide range of energy solutions (see Figure 2). These include oil and gas exploration, geothermal energy production, wind energy generation, solar farm development, and upcoming offshore wind and battery storage projects. Their notable energy assets include the Maibarara Geothermal Plant, Nabas Wind Power Project, and Tarlac Solar

Farms, all of which contribute to the national grid and support the country's shift to clean energy.

The mission of PetroEnergy is to address the country's growing energy demands through environmentally responsible and socially impactful practices. The company is known for diversified energy portfolio and strong partnerships with Kyuden International in Japan and Copenhagen Energy in Denmark. PetroGreen Energy Corporation (PGEC), a subsidiary company of PetroEnergy, has successfully developed and managed several major energy projects including the Maibarara geothermal plant in Sto. Tomas, Batangas, the Nabas wind power facility in Nabas, Aklan, and large-scale solar farms in Tarlac City.

In line with the strong advocacy for sustainability, PetroEnergy has embedded Environmental, Social, and Governance (ESG) principles into the company core operations. Environmentally, the company is committed to reducing carbon footprint by prioritizing clean and renewable energy projects. Socially, the company supports community development through education, healthcare, livelihood, and environmental conservation programs under the CSR framework with the 'We Power H.E.L.P.' initiative. From a governance standpoint, the company adheres to the highest ethical standards and compliance with the SEC's Revised Code of Corporate Governance, promoting transparency, accountability, and stakeholder engagement. The company also publishes an annual Sustainability Report to reinforce the dedication of PetroEnergy to responsible business practices.

## **Nature of Assignments or Tasks Given**

The student was assigned a comprehensive range of tasks encompassing the full software development lifecycle. The tasks include assessing the student's technical proficiency, analytical skills, and ability to work within a structured team environment. The practicum began with a project kick-off phase where the student was introduced to the project scope, objectives, and expected deliverables.

Following the orientation, the student engaged in data familiarization and analysis to gain a thorough understanding of the existing datasets. This involved identifying inconsistencies, understanding the structure and meaning of the data, and preparing for organization and transformation. The student participated in requirements gathering sessions and contributed to the documentation of user needs and technical specifications, this ensured a clear foundation for the project development. The student also conducted research to identify the most appropriate technologies, frameworks, and tools for the system backend, frontend, and database framework.

A significant part of the practicum was to design a data processing plan to convert raw data into usable and structured format. The student helped design data models and assisted in developing a robust database schema that supported efficient queries and data integrity. Also, the student participated in planning for analytics and reporting features, proposing visual dashboards and key metrics that would later guide the application's business value. On the other hand, the student designed the overall user interface (UI) mockups and creation of clean, intuitive layouts that enhanced user experience before the development phase.

The system development phase constituted a core part of the practicum. The student implemented various system features, working across the frontend and some parts of the backend to create a cohesive and functional product. Which includes a repository for viewing

company data record, facilitating data entry and export functionality. While a dashboard for generating data visualizations from the approved data records and to identify certain trends, comparative analysis, and historical data. The testing and quality assurance tasks followed, where the student conducted user acceptance testing to verify the functionality, performance, and stability of the application. The system development concluded with the preparation of comprehensive system documentation.

The student contributed to the development of training materials such as the user manual which includes quick start guides and process walkthroughs to assist future users of the system. These materials supported the subsequent user training and handover phase, where the students provided live demonstrations, answered user questions, and ensured the smooth transition of the system to its intended users. The practicum concluded with project closure and reporting, the student compiled the final project report summarizing key accomplishments, technical insights, challenges encountered, and recommendations for future improvements.

Throughout the practicum, the student showed consistent initiative, professionalism, and a commitment to learning. The student demonstrated the ability to conduct independent research, adapt to evolving project needs, and apply best practices in development and documentation. The experience not only deepened their technical capabilities but also strengthened their problem-solving, communication, and project management skills in a real-world setting.

## Total Hours Rendered

The student completed a total of 395 hours during the practicum. This includes 72 hours for project setup and data familiarization, providing foundational knowledge for the student to gain a deep understanding of the project context and preparation for the technical work ahead. This is followed by 123 hours for data modeling and system design, which emphasized database preparation and system design to ensure a scalable and user-friendly system. While 176 hours for the system development and implementation, performing hands-on development work such as implementing database structures, building core application functionalities, and conducting testing and quality assurance to validate system performance. The documentation and training which involves 24 hours to ensure that all deliverables were properly documented and transitioned to stakeholders. The student was able to complete the practicum on July 9, 2025.

Table 1.0  
*Summary of Hours Rendered*

Phases	Hour/s
	Total
Project Setup and Data Familiarization	72
Data Modeling and System Design	123
System Development and Implementation	176
Documentation and Training	24
Total	395

## Presentation of Output

### Project Setup and Data Familiarization



The screenshot shows a detailed data form with several tabs at the bottom: CSV, Econ, HR, Social, Env, Corp Gov, and Procurement. The main area contains numerous tables and charts, likely representing ESG data across various business domains. The data is organized into columns for categories like 'Category', 'Sub-Category', 'Metric', 'Value', and 'Unit'.

Figure 3. HI PERC Data Form 2024

An initial company dataset was provided to the project team to be familiarize with the business workflow of PetroEnergy, this contains comprehensive ESG data across four critical business domains (See Figure 3). The collected dataset encompasses Environment data tracking sustainability metrics and environmental impact indicators, Economics data managing financial performance and economic indicators, Social data covering community engagement and social responsibility metrics, and Energy data monitoring consumption, production, and efficiency measurements. The data set provided essential insights into operational complexity and data management challenges in PetroEnergy.

Based on the complexity and scope of the dataset, our project team setup was strategically divided into three specialized groups with specific team leaders. Each team is assigned to specific data sources to ensure focused areas and comprehensive coverage. Team 1 was assigned to Energy data analysis and Social data from human resources, to address workforce-related social metrics alongside energy consumption and production data. Team 2 focused exclusively on Environment data for deep specialization in sustainability metrics, environmental impact assessments, and regulatory compliance requirements. Team 3 handled

Economics data and Social data from the Corporate Social Responsibility (CSR), creating synergy between financial performance metrics and community engagement initiatives.

The intern was assigned to team 2, together with two other team members of the project team that handled the environmental data from data organization, preprocessing, and visualization. This strategic team division enabled parallel processing of data sources while maintaining clear accountability and specialized expertise within each domain. This organizational approach facilitated more efficient analysis, better understanding, and more targeted solution development for each data source category.

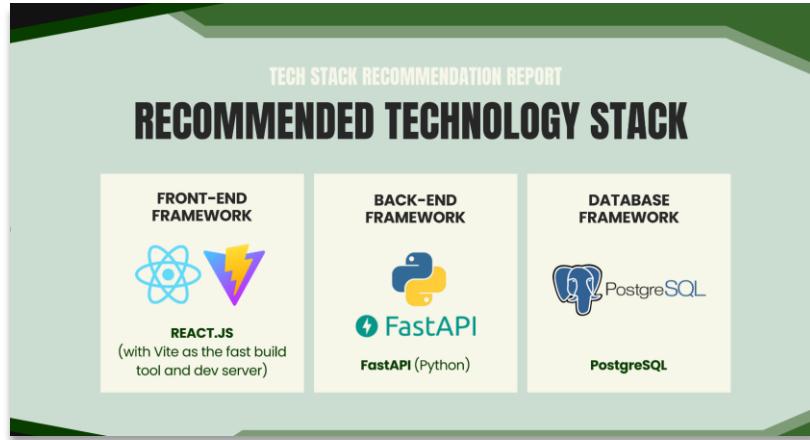
The environmental datasets revealed significant inconsistencies across different departments and operational sites throughout the organization. Data entry processes were previously performed manually using various formats and conventions that lacked standardization. These differences highlighted the critical need for a structured, standardized, and centralized solution to manage data inputs more effectively across all business units. The given dataset indicated that ESG data were being managed through individual Excel spreadsheets without a centralized repository, creating data silos and limiting organizational visibility.

The team 2 conducted separate data gathering to the key person in-charge assigned with the environment data source, to understand key performance indicators, common data issues, and specific reporting needs. The data familiarization process served as a preparatory step for future activities, including requirements specification, database design, and transformation planning.

The project team produced the project charter document that outlines the foundational structure of the project. It identifies the business needs for a centralized web-based solution. The scope of the project is clearly defined, including in-scope items such as user input forms,

visual reporting, and KPI identification, while excluding real-time integration and full production deployment. The document specifies all the key deliverables, which includes a database schema, UI mockups, and training materials. It also outlines project risks and assumptions, such as data quality issues, potential tool incompatibilities, and evolving project requirements. A detailed milestone schedule provides target and actual completion dates for each project phase. Lastly, the document includes a breakdown of the project team's composition, listing the names and roles of students, project managers, and PetroEnergy stakeholders.

The team 2 produced the requirements specification document that provides a comprehensive set of business, user, and product requirements derived from discussions with PetroEnergy stakeholders. The document details the complete set of requirements necessary to build the system. It begins with a breakdown of business requirements, which include the need for a centralized data repository, role-based access control, structured and guided forms for accurate data entry, visual dashboards for monitoring trends, regular data backups, and account management. The document then outlines user requirements by clearly defining the roles along with their respective permissions and responsibilities within the system. It also specifies functional requirements such as access control restrictions, secure login processes, dashboard viewing, filtering and exporting data, audit logging, and managing user profiles. Non-functional requirements are included to address system performance, scalability, encryption for security, ease of use, and system maintainability.



*Figure 4. Technology Stack Recommendation*

Also, the team 2 produced the technology stack recommendation report to present a comprehensive and strategic overview of the recommended technology stack for the system development (See Figure 4). The evaluation process considered key criteria such as performance, scalability, security, maintainability, and developer familiarity. For the frontend, React.js with Vite was selected to ensure rapid build times which was embedded with Material UI component. On the backend, the team chose FastAPI with Python for its speed and simplicity in creating REST APIs, incorporating OAuth2 with JWT for secure authentication, while PostgreSQL for the database. The infrastructure hosting options prioritized AWS for its scalability and security. Finally, the report recommends GitHub for version control, while Microsoft Teams for communication and collaboration.

The outputs from this phase laid the groundwork for the system development and ensured that the platform would be tailored to the operational structure and reporting priorities of PetroEnergy. Additionally, the finalized technology stack setup ensured that all developers had a synchronized workspace for the system development phase.

## Data Modeling and System Design

The comprehensive data analysis phase entails data modeling and system design implementation that shows modern approaches for building scalable and data-driven applications. This presents the output for this phase which includes the data architecture, relational database design, analytics and reporting plan, user interface mockups, and system architecture.

### Data Architecture

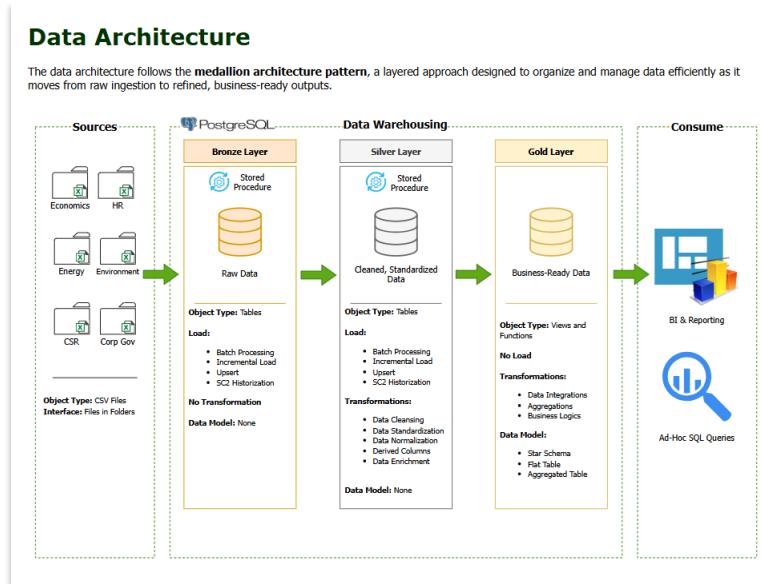
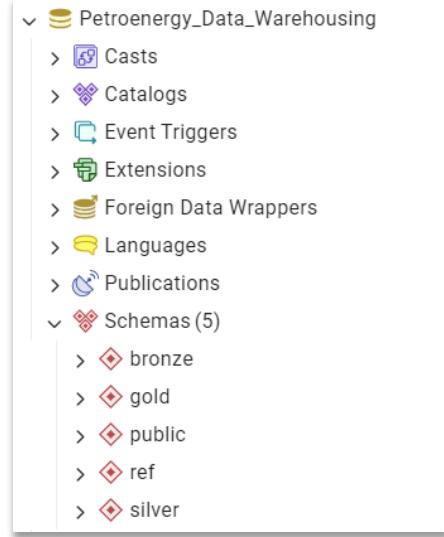


Figure 5. Medallion Data Architecture

The implemented data architecture for the collected data follows a medallion architecture pattern which represented a layered approach specifically designed to organize and manage data efficiently as it transitions from raw ingestion to refined business-ready outputs (See Figure 5). This architectural framework demonstrates a comprehensive understanding of modern data engineering principles, which establish a robust foundation for enterprise-level data processing and analytics. The sources encompass multiple critical business domains, including economics data containing raw economic indicators and metrics, HR data managing

human resources information and employee records, energy data tracking consumption and production metrics, and CRM data handling customer relationship management information.



*Figure 6. PostgreSQL Schemas*

These diverse data sources feed into a PostgreSQL data warehouse that implements the three-tier medallion structure consisting of the bronze, silver, and gold layers (See Figure 6).

A	B	C	D	E	F	G	H	I
..	..	..	volume	unit_of_measurement	month	year		
1	ww_id	ns_id	293	cubic meters	January	2022		
2	WW-PSC-2022-001	NS-PSC-001	263	cubic meters	February	2022		
3	WW-PSC-2022-002	NS-PSC-001	292	cubic meters	March	2022		
4	WW-PSC-2022-003	NS-PSC-001	285	cubic meters	April	2022		
5	WW-PSC-2022-004	NS-PSC-001	294	cubic meters	May	2022		
6	WW-PSC-2022-005	NS-PSC-001	238	cubic meters	June	2022		
7	WW-PSC-2022-006	NS-PSC-001	223	cubic meters	July	2022		
8	WW-PSC-2022-007	NS-PSC-001	130	cubic meters	August	2022		
9	WW-PSC-2022-008	NS-PSC-001	108	cubic meters	September	2022		
10	WW-PSC-2022-009	NS-PSC-001	279	cubic meters	October	2022		
11	WW-PSC-2022-010	NS-PSC-001	199	cubic meters	January	2022		
12	WW-PSC-2022-011	NS-PSC-002	114	cubic meters	February	2022		
13	WW-PSC-2022-012	NS-PSC-002	228	cubic meters	March	2022		
14	WW-PSC-2022-013	NS-PSC-002	218	cubic meters	April	2022		
15	WW-PSC-2022-014	NS-PSC-002	202	cubic meters	May	2022		
16	WW-PSC-2022-015	NS-PSC-002	189	cubic meters	June	2022		
17	WW-PSC-2022-016	NS-PSC-003	149	cubic meters	July	2022		
18	WW-PSC-2022-017	NS-PSC-002	223	cubic meters	August	2022		
19	WW-PSC-2022-018	NS-PSC-002	220	cubic meters	September	2022		
20	WW-PSC-2022-019	NS-PSC-002	223	cubic meters	October	2022		
21	WW-PSC-2022-020	NS-PSC-002	693	cubic meters	January	2023		
22	WW-PSC-2023-001	NS-PSC-001	507	cubic meters	February	2023		
23	WW-PSC-2023-002	NS-PSC-001	758	cubic meters	March	2023		
24	WW-PSC-2023-003	NS-PSC-001	708	cubic meters	April	2023		
25	WW-PSC-2023-004	NS-PSC-001	618	cubic meters	May	2023		
26	WW-PSC-2023-005	NS-PSC-001	641	cubic meters	June	2023		
27	WW-PSC-2023-006	NS-PSC-001	432	cubic meters	July	2023		
28	WW-PSC-2023-007	NS-PSC-001	552	cubic meters	August	2023		
29	WW-PSC-2023-008	NS-PSC-001	314	cubic meters	September	2023		
30	WW-PSC-2023-009	NS-PSC-001						

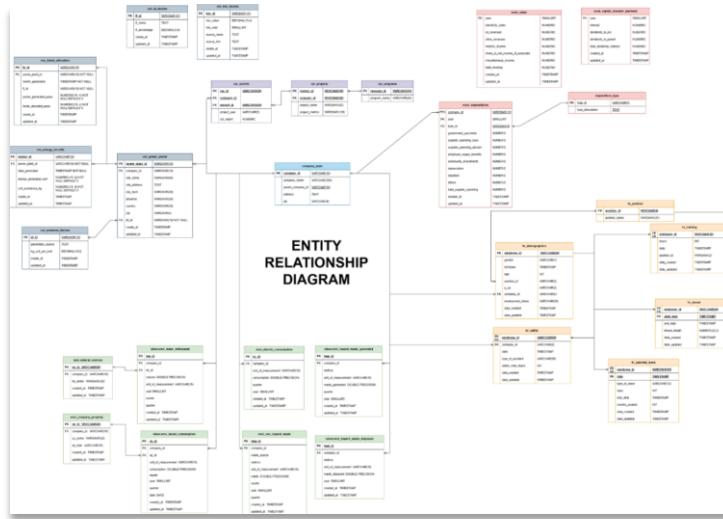
*Figure 7. Organized Environment Data*

In the Bronze Layer, the team 2 successfully organized and processes various Excel files from the collected environment data through batch and incremental loading, to preserve their original structure for maximum downstream flexibility (See Figure 7).

For the Silver Layer, the team 2 performed data cleaning and validation, resolving inconsistencies such as missing labels and varied date formats. Additional derivations were applied, including standardized fields for month and quarter values to enable further data analysis.

In the Gold Layer, the team 2 created optimized views and SQL functions to support data visualization and reporting needs. These outputs were structured using a star schema design, enabling seamless integration with BI tools and improving performance for analytical queries.

### Entity-Relationship Diagram



*Figure 8. Entity-Relationship Diagram*

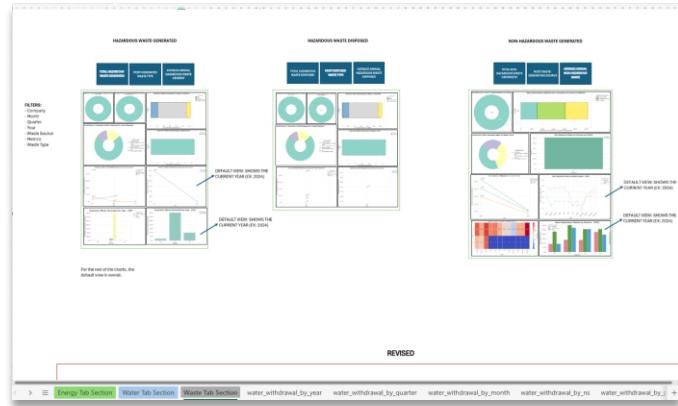
The Entity Relationship Diagram presents advanced database design principles through comprehensive normalization, strategic entity organization, and robust referential integrity mechanisms (See Figure 8). The database structure provides the foundational data management framework for all system operations and specifically supports the ESG data requirements of PetroEnergy across all four business domains.

The implemented ERD features multiple interconnected entities strategically organized through functional domains using systematic color-coded categorization, representing a significant achievement in database architecture for PetroEnergy. The diagram features one-to-many relationships to effectively support hierarchical data structures for complex business applications and ESG reporting requirements. Also, the design incorporates many-to-many relationships that accommodates complex business relationships such as multi-departmental ESG initiatives, cross-functional reporting requirements, and integrated sustainability metrics across multiple business units.

The implementation ensures a comprehensive data integrity through strategically placed foreign key constraints that maintain referential integrity across all entities within the ESG data ecosystem. The delivered normalized structure effectively reduces data redundancy while maintaining consistency across all four data domains - Environment, Economics, Social, and Energy. Every entity has been designed with properly implemented primary keys and foreign key relationships, creating a robust data foundation that supports complex analytical queries while maintaining integrity and consistency in the PetroEnergy data.

### *Analytics and Reporting Plan*

The analytics and reporting plan document for the environment data presents a sample dashboard framework structure that establishes standardized approaches to analytics visualization. It includes three distinct complexity levels designed to accommodate varying user needs and analytical requirements. This framework demonstrates thoughtful consideration of user experience progression and functional complexity scaling.



*Figure 9. Analytics and Reporting Plan for Environment Data*

The dashboard encompasses three distinct sections for energy consumption, water consumption, and waste generated (See Figure 9). It includes a pie chart for quick status assessment, bar charts for comparative analysis, and line graphs for overall historical data visualization. The plan includes interactive filtering capabilities enabling users to customize their data views, drill-down functionality for detailed analysis, comparative analysis views supporting side-by-side evaluations, and time-based visualizations for data analysis and reporting. The analytics implements a complex multi-panel arrangement for incorporating components such as multi-dimensional data visualization for complex data relationships, and advanced statistical charts for in-depth analysis. The design standards maintain consistency across all templates through systematic color coding assigned for each company, standardized grid systems ensuring visual coherence, and progressive user experience complexity aligned with the needs of PetroEnergy.

## User Interface Mockups

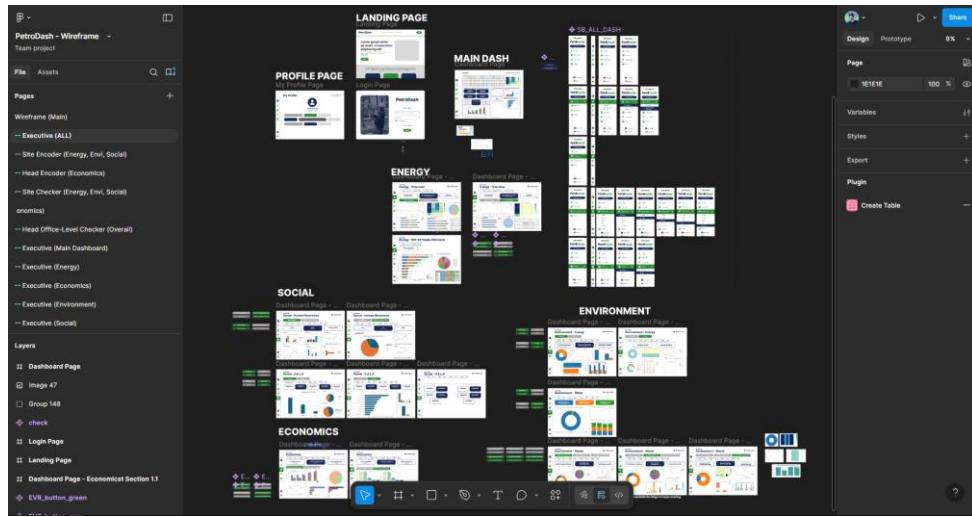


Figure 10. User Interface Mockups

The intern designed the whole user interface mockups that provide a comprehensive web application interface built around a design system that supports multiple page types and user (See Figure 10). The design mockup demonstrates user experience thinking with careful attention to navigation, functionality, and visual hierarchy.

The navigation structure features a hierarchical sidebar menu system with expandable sections supporting multiple page categories including profile and user management interfaces, main dashboard and specific analytics views for energy, economics, environment, and social. Each category contains specialized functionality tailored to specific user needs while maintaining consistent navigation patterns and visual design principles.

The main dashboard serves as the central hub displaying key metrics and KPIs for quick system overview and providing rapid access to frequently used charts.

The specific analytics interfaces include energy for featuring real-time energy record monitoring displays, and emission avoided analytics and trends analysis. Economic data views provide financial dashboards and reporting capabilities and forecasting tools for strategic

planning. Environmental monitoring interfaces track sustainability metrics that track energy and water consumption, and waste generated. Social includes analysis and reports for human resources data, counts for CSR initiatives, and community engagement metrics.

The design principles demonstrate consistency through central design pattern across all page types. The design provides comprehensive accessibility features including clear typography and appropriate color contrast, and user-centric design with intuitive navigation and interaction patterns that reduce cognitive load and improve user efficiency.

### System Architecture Design

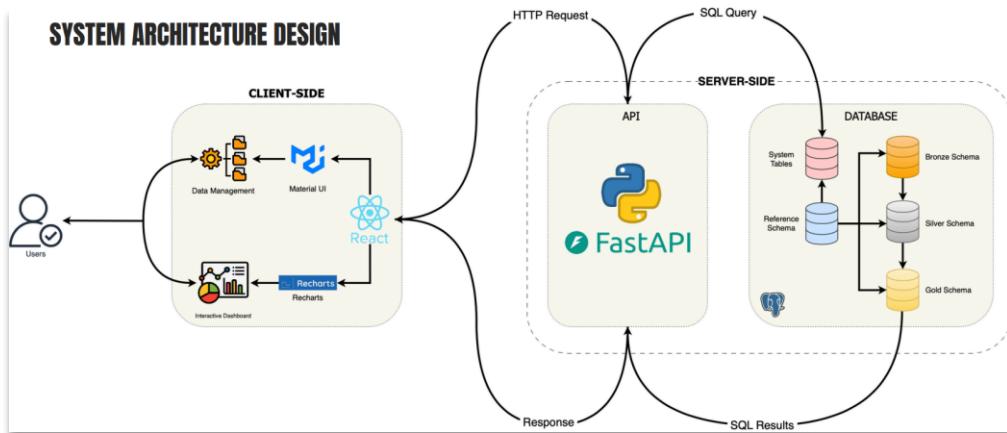


Figure 11. System Architecture Design

Team 2 created the system architecture which implements a modern client-server design with clear separation of concerns and a scalable technology stack optimized for performance, maintainability, and user experience (See Figure 11). This architecture demonstrated the understanding of contemporary web application development principles and enterprise-scale system design requirements.

The client-side architecture leverages React as the primary frontend framework for component-based user interface development. The Material UI component provides comprehensive design system and component library support and Recharts delivering powerful

data visualization and charting capabilities. The components include sophisticated data management handling client-side state management and data operations, interactive dashboards providing real-time data visualization and user interaction capabilities, and responsive user interfaces ensuring accessible and engaging user experiences across all device types.

The server-side architecture centers on FastAPI that provides high-performance Python web framework which supports RESTful design principles with standard HTTP methods and status codes. It includes asynchronous processing capabilities for non-blocking request handling that maximizes system throughput and responsiveness.

The database layer implements multi-schema architecture with system tables managing application metadata and configuration. The reference schema containing master data and lookup tables, and the medallion architecture progression through bronze schema for raw data ingestion, silver schema for processed and cleaned data, and gold schema for business-ready analytical data.

The system architecture follows a logical progression beginning with HTTP requests initiated by clients, followed by API processing where FastAPI handles business logic and validation, SQL queries executing optimized database operations, SQL results providing data retrieval and aggregation, JSON responses returning structured data to clients, and React component visualization rendering data using Recharts for rich user experiences. This architecture provides exceptional scalability through microservices-ready design patterns, optimized performance for both reading and write operations, enhanced maintainability through clear separation of concerns, flexibility allowing easy technology stack modifications, and robust security through API-first approaches with proper authentication layers.

The project team successfully delivered a complete data modeling and system design solution tailored to ESG data of PetroEnergy. The medallion architecture transformed the fragmented Excel data into a centralized data warehouse covering Environment, Economics, Social, and Energy domains. A normalized entity-relationship diagram ensured data integrity, while a analytics and reporting plan framework supported both operational and strategic reporting. The user interface mockup design emphasized intuitive and consistent user experience across modules. The system architecture ensures scalability and performance for enterprise-level ESG data management for PetroEnergy.

## ESG Dash Web Application

Sprint	Task Name	Module	SubModule	Responsible	Start Date	End Date	Duration	Total Working Hours In	Status	Priority
<b>Sprint 1</b>										
	Login/Logout	User Account Management	Logout API, Session Logout Functionality, Form Validation	Team 3	5-Jun-2023	5-Jun-2023	1	24	Complete	High
	Homepage	User Account Management	Dashboard, Data visualization and their handling	Team 3	5-Jun-2023	5-Jun-2023	1	24	Complete	Low
	Data Input and Viewing	Data Entry	Geopolitical Section API, Data entry, Data validation	All Teams	5-Jun-2023	5-Jun-2023	1	240	Complete	High
	Form Creation	Data Entry	Second Section API, View Emissions Report, Second Scope and Affiliations	All Teams	5-Jun-2023	5-Jun-2023	1	240	Complete	High
	User Accounts Management	System Administration	User Accounts Management API, User role creation, User role modification, Display user info, both profile creation and API based authentication	Team 3	6-Jun-2023	6-Jun-2023	1	24	Complete	Low
	Profile Management	User Account Management	Profile Management API, User Profile Modification, User Profile Deletion	Team 1	6-Jun-2023	6-Jun-2023	1	32	Complete	Low
<b>Sprint 2</b>										
	Role & Permission Management	System Administration	Display Dashboard by user Role, Notification for Site-Check on input	Team 1	9-Jun-2023	9-Jun-2023	1	32	Complete	High
	Geopolitical notifications and Alerts	Data Entry	Notification for Site-Check on input	All Teams	9-Jun-2023	9-Jun-2023	1	80	Not Started	Low
	Submitted Data Access and Viewing	Data Validation	Geopolitical API, Data Validation	Team 3 & Team 2	10-Jun-2023	10-Jun-2023	1	48	Complete	High
	Submitted Data Validation	Data Validation	Geopolitical API, Data Validation	Team 3 & Team 2	10-Jun-2023	10-Jun-2023	1	48	Complete	High
	Real-time Dashboards	Dashboard & Reporting	Geopolitical API, Geopolitical Data Retrieval API	All Teams	11-Jun-2023	11-Jun-2023	1	240	Complete	High
	Data Visualizations	Dashboard & Reporting	Geopolitical Charts, Chart Generation, Real-time UI, New API, Chart API	All Teams	11-Jun-2023	11-Jun-2023	1	240	Complete	High
	Visualization Filtering	Dashboard & Reporting	Geopolitical API, Real-time UI, New API, Chart API	All Teams	11-Jun-2023	11-Jun-2023	1	240	Complete	High
<b>Sprint 3</b>										
	Report Generating and PDF Generation	Dashboard & Reporting	Reporting Chart Data, Reporting PDF Generation, PDF generation, User PDF Generation	All Teams	14-Jun-2023	17-Jun-2023	3	140	Complete	Low
	Main Dashboard	Dashboard & Reporting	Reporting Chart Data, Reporting PDF Generation, PDF generation, User PDF Generation	Team 3	14-Jun-2023	17-Jun-2023	3	48	Complete	High
	Notification and Alerts	Data Validation	Notification for Enclosure on update, notification for Head Office, User Action Tracking	All Teams	18-Jun-2023	19-Jun-2023	1	160	Not Started	Low
	Activity Logging	Audit Log	User Action Tracking, User Activity Logging API	Team 2	19-Jun-2023	20-Jun-2023	1	72	Complete	Low

Figure 12. System Development Sprint Planning

The development of ESGDash for PetroEnergy was executed through three focused sprints (See Figure 12). Due the time constraint, the project team and the host company decided to finish only the major system modules or the high-priority tasks. Each sprint delivered system features essential to transforming the company's ESG processes from fragmented spreadsheets into a centralized, digital platform. The development focused on secure data access, efficient input workflows, real-time dashboards, and full auditability that aligns with the strategic goals of PetroEnergy for sustainability reporting.

## Sprint 1



Figure 13. ESGDash Landing Page

The foundation of the system was established through the implementation of core access and data management features.

The screenshot displays two side-by-side views of the ESGDash interface. On the left is the "User Login" screen, featuring a background image of a female engineer in a hard hat and safety vest standing next to industrial equipment. The screen includes fields for "encoder\_m1gpp@example.com" and a password, along with "Forgot Password?" and "LOGIN" buttons. On the right is the "Power Generation" data repository screen. It shows a table with columns: Power Project, Date, Energy Generated (GWh), CO2 Avoidance (Metric Ton), Status, and Action. A modal window titled "Are you sure you want to log out?" is overlaid on the table, containing "CANCEL" and "LOG OUT" buttons. The table data is as follows:

Figure 14. ESGDash Login and Logout Feature

The development team completed the login and logout system, which included session handling, form validation, error handling, and secured user authentication (See Figure 14). This was essential in enabling role-based access to system functionalities such as data entry, validation, and reporting.

*Figure 15.* Environment Repository Pages

The intern developed the repository page for the environment section, where the encoders could view, search, filter, and paginate ESG records by department and section (See Figure 15). This repository supported not just data visibility, but also user-driven filtering based on company, metrics, and time period.

*Figure 16.* Single and Bulk Upload Modals for Environment - Energy

This includes single and bulk data operations feature through the implementation of modals for adding, viewing, editing, and importing records (See Figure 16). These forms were equipped with real-time validation and tooltips to guide users in maintaining data accuracy. The repository and form creation features provided the technical backbone for efficient, error-reduced data entry, which is one of the primary goals of ESGDash.

## Sprint 2

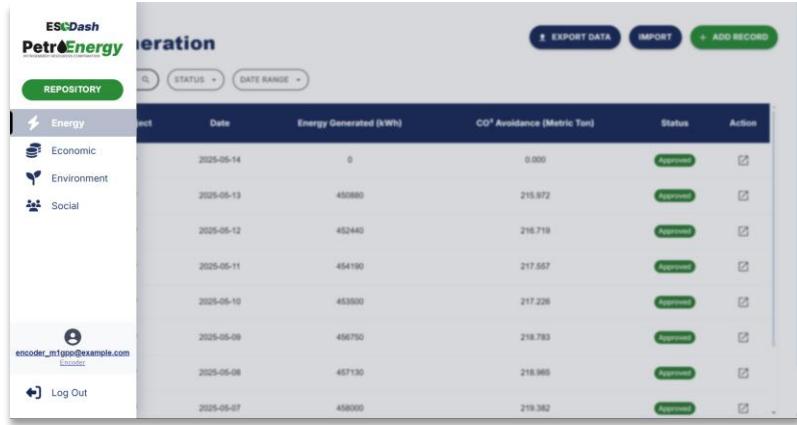


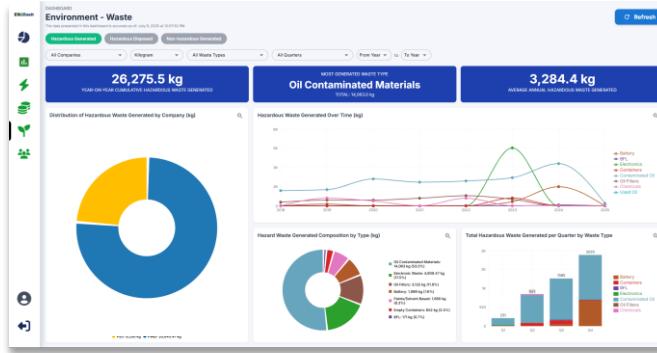
Figure 17. Encoder User Access

The project team developed role-specific data validation and dynamic data visualization. The role and permission management ensured that users would only see dashboards and data relevant to their role. The system dynamically adjusted the interface and accessible features based on these roles, improving both security and usability. For example, the encoder can only view the repository page (See Figure 1).

Two side-by-side modals titled 'VIEW RECORD' and 'Electricity Consumption Details'. Both modal forms contain the following fields: EC\_ID (EC-PSC-2025-002), COMPANY (PetroSolar Corp), SOURCE (Control Building), UNIT (kWh), CONSUMPTION (23), QUARTER (Q2), YEAR (2025), and STATUS (Under Review (Site)). The left modal has 'APPROVE' and 'REVISE' buttons at the bottom. The right modal has 'EDIT' and 'APPROVE' buttons at the bottom. The right modal's STATUS field is highlighted in orange with the text 'For Revision (Site)'.

Figure 18. View, Approve or Revise, and Edit Modal Environment - Energy

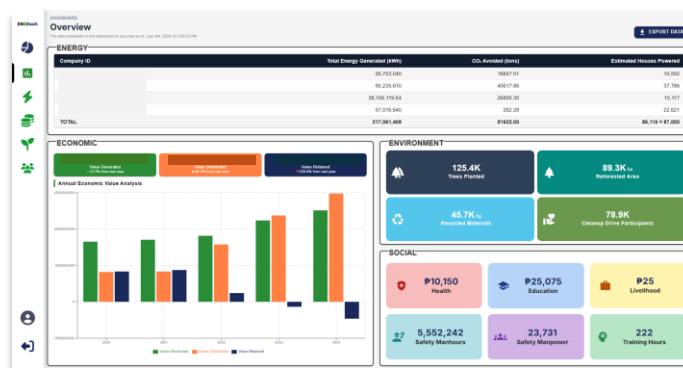
The repository includes checker and validation workflow to allow site-level and head-office checkers to view, approve or revise ESG data through structured modals (See Figure 18). This feature established the formal approval process required before data could appear in reports and dashboards.



*Figure 19.* Dashboard Page for Environment – Waste Section

On the other hand, the intern developed the real-time dashboards and visualizations for the Environment – Waste section (See Figure 19). These included interactive charts with zoom and export capabilities, filterable views for drilling into company-specific data, and dynamic updates tied to approved entries. The dashboard module translated raw data into actionable insights, which provides stakeholders with a clear view of environment waste metrics across the operation sites of PetroEnergy. Each visualization was equipped with tooltips and dynamic legends to support informed interpretation.

### Sprint 3



*Figure 20.* Dashboard Overview

The project team developed the main dashboard to offer a consolidated summary of all ESG metrics across departments (See Figure 20). It displayed time-stamped charts and key

indicators designed for executive-level decision-making, emphasizing timeliness and strategic insight.

The screenshot shows a web-based application interface titled "Audit Trail". The table has columns: Timestamp, User Email, Table, Record ID, Action, Old Value, New Value, and Description. The data in the table is as follows:

Timestamp	User Email	Table	Record ID	Action	Old Value	New Value	Description
July 9, 2025, 2:59 PM	admin	account	admin	login	success	User admin	
July 9, 2025, 2:59 PM	encoder_m1gpp@example.com	account	encoder_m1gpp@example.com	logout	manual	encoder_m1g manual	
July 9, 2025, 2:52 PM	encoder_m1gpp@example.com	account	encoder_m1gpp@example.com	login	success	encoder_m1g	login
July 9, 2025, 2:52 PM	ho_checker_pgec@example.com	account	ho_checker_pgec@example.com	logout	manual	ho_checker_p manual	
July 9, 2025, 2:50 PM	ho_checker_pgec@example.com	account	ho_checker_pgec@example.com	login	success	ho_checker_p	login
July 9, 2025, 12:37 PM	admin	account	admin	logout	manual	User admin m	

*Figure 21. ESGDash Audit Trail Page*

To support compliance and transparency, the team implemented a full audit logging system in the admin user role (See Figure 21). This module recorded all user actions, including uploads, edits, and approvals, and presented them in a searchable interface. Through audit logging, the ESGDash provides a fully traceable and accountable environment for ESG data operations.

In summary, the project team developed the ESGDash that includes the major features to effectively addressed the need for accurate, timely, and transparent ESG reporting of PetroEnergy. Through structured sprint execution, the project team implemented role-based access, dynamic repositories, multi-level data validation, interactive dashboards, and audit logging. Which are all integrated into a modern web application that replaces the company's legacy spreadsheet-based process. Each system feature contributed to a seamless user experience and reliable ESG data pipeline that supports the long-term sustainability objectives of PetroEnergy.

## Synthesis of the Practicum Engagement

### Learnings

I developed a comprehensive full-stack development capabilities from frontend technologies like React.js with Material UI, to backend implementation using FastAPI with Python, and database management with PostgreSQL. The hands-on experience with the complete technology stack provided practical knowledge that theoretical coursework alone could not deliver. The development of the ESGDash web application allowed me to understand how different components interact and integrate to create a cohesive system.

The implementation of the medallion architecture taught me advanced data engineering principles, while working with the raw and fragmented Excel data. Transforming it into a structured, centralized data warehouse demonstrated the critical importance of proper data modeling and the challenges of data standardization in enterprise environments.

The sprint-based development approach introduced me to agile methodologies in a real-world context, where the three-sprint structure for ESGDash development provided insights into project planning, iterative development, and feature prioritization under time constraints. This experience taught me how to balance technical ideals with business requirements and deadlines, understanding that successful software development requires both technical excellence and practical project management skills.

Working with Environment, Social, Governance, and Energy data across multiple departments revealed the intricate nature of sustainability reporting. Which revealed that ESG data management extends beyond technical implementation to include compliance requirements, stakeholder needs, and strategic business objectives that must be carefully considered in system design.

The practicum highlighted the complexity of enterprise-level systems, particularly the need for role-based access control, audit logging, data validation workflows, and multi-level approval processes. That go far beyond simple CRUD operations to encompass business process automation. Through requirements gathering sessions and user training,

Lastly, I learned the importance of effective communication with non-technical stakeholders, developing skills in translating business needs into technical specifications and presenting technical solutions in business terms. Addressing inconsistencies in manually entered data across different departments and formats taught me the importance of data validation, standardization, and the design of user-friendly interfaces that minimize input errors. The transition from fragmented Excel spreadsheets to a centralized web application required understanding existing workflows, identifying pain points, and designing solutions that improved efficiency while maintaining data integrity.

## **Realizations**

The development of comprehensive UI mockups and user interface design revealed that technical excellence means little without user adoption. Which is the most sophisticated backend architecture being ineffective if users find the system difficult to navigate or understand. This realization fundamentally shaped my approach to prioritizing intuitive design and user-centric features, understanding that successful software must bridge the gap between technical capability and user experience.

Working with inconsistent data formats and manual entry processes highlighted that data quality issues cascade through every level of an application. Where no amount of sophisticated analytics or beautiful visualizations can compensate for poor data quality at the

source. This emphasizes the importance of implementing robust data validation and standardization processes from the beginning.

The creation of training materials, user manuals, and comprehensive system documentation demonstrated that project success extends beyond code completion. An effective knowledge transfer ensures system sustainability and user adoption, which makes proper documentation as critical as the technical implementation itself. The practicum revealed significant differences between academic projects and enterprise development. Where real-world projects involve complex stakeholder management, compliance requirements, legacy system integration, and the need to balance technical ideals with business constraints and timelines.

The strategic division into three specialized teams handling different data domains demonstrated how complex projects require both collaboration and specialized expertise, teaching me the value of clear role definition while maintaining cross-functional communication and shared project objectives.

## Conclusion

My practicum experience at PetroEnergy has been transformative in bridging the gap between academic knowledge and professional competency. Which provides a comprehensive view of the software development lifecycle in an enterprise environment that spans project planning, data analysis, system design, development, testing, and deployment. The successful development of ESGDash demonstrated proficiency in modern web development technologies and methodologies, with the implementation of complex features such as role-based access control, real-time dashboards, data validation workflows, and audit logging systems. Show my

ability to handle enterprise-level requirements and challenges that extend far beyond typical academic projects.

The practicum reinforced that technology solutions must align with business objectives and user needs. The success of the project team in transforming ESG data management of PetroEnergy from fragmented spreadsheets to a centralized platform illustrated how technical skills can drive meaningful business value and operational efficiency. This experience established a solid foundation for continued professional development. The combination of technical skills, business knowledge, problem-solving abilities, and stakeholder management capabilities developed during this practicum. Which provides the necessary foundation for success in software development roles that require both technical expertise and business understanding.

The rapidly evolving nature of technology and business requirements highlighted the importance of continuous learning and adaptation. This reveals that professional growth requires consistent update with the current technologies, methodologies, and industry best practices while maintaining the ability to apply these tools effectively in real-world contexts. The practicum validated that hands-on experience in a professional environment accelerates learning and skill development far beyond what is possible in purely academic settings. The challenges and responsibilities of real-world projects provided invaluable insights that will inform future professional decisions and approaches throughout my career.

The ESGDash project for PetroEnergy represents not just a technical achievement, but a comprehensive professional development experience that has prepared me for the challenges and opportunities of a career in software development. The knowledge gained, skills developed, and professional relationships established during this practicum will serve as valuable assets throughout my career journey. This provides both the technical foundation and

professional maturity necessary for success in the dynamic field of software development. This experience has demonstrated that effective software development requires not only coding skills but also the ability to understand business needs, collaborate with diverse stakeholders, manage complex projects, and deliver solutions that create real value for the organizations.

## Appendices

### Appendix A

#### Competency-Based CV

# KANE JUSTINE COMETA

San Pedro, Laguna, 4023 | [cometakanejustine@gmail.com](mailto:cometakanejustine@gmail.com) | +63 9213259656 | [Linkedin](#)

#### ABOUT

Hi, I'm Kane Justine A. Cometa, a 4th-year Computer Science student with a passion for Front-End Development and Data Science. I have gained practical experience in web, mobile, and software app development, alongside with data analytics and predictive model development. I am actively seeking opportunities to refine my skills and contribute to the cutting-edge data-driven technology solutions.

#### TECHNICAL SKILLS

Front-End Development	React JS, Flask, Dash	Agile Project Management
Data Analysis and Visualization	Pandas, NumPy, SciPy	Prompt Engineering
Predictive Modeling and Selection	Scikit-learn	ChatGPT

#### SOFT SKILLS

Problem Solving	Strategic Thinking	Communication
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#### WORK EXPERIENCE

##### Student Assistant

Mapúa MCL - Instructional Facilities Office | Apr - Jul 2024

- Providing academic support required for the students in Mapúa MCL
- Maintaining and managing private student information in online and physical files.
- Interacting with students in person to address any questions or concerns.

##### Student Assistant

Mapúa MCL - Admission Office | Aug - Sep 2023

- Maintaining and managing private student information in online and physical files.
- Assisting the admissions office in processing admission forms for potential students.
- Interacting with students in person and via phone to address any questions or concerns.

#### CERTIFICATIONS

##### Data Analytics with Python

IBM | April 2025

- Skills:** Data Analysis · Data Visualization · Predictive Modeling · Model Selection · Python · NumPy · Pandas · Scikit-Learn · SciPy

##### Generative AI: Prompt Engineering

IBM | April 2025

- Skills:** Large Language Models (LLM) · Prompt Engineering · Generative AI · Artificial Intelligence (AI) · ChatGPT

##### Introduction to Front-End Development

Meta | Feb 2025

- Skills:** Web Development Tools · HTML and CSS · Responsive Web Design · Front-End Development · User Interface

#### EDUCATION

##### Mapúa Malayan Colleges Laguna

B.S. Computer Science | College | 2021 - 2025

- President's Lister | 2nd Year - 3rd Year
- Dean's Lister | 1st Year - 3rd Year

##### Malayan Colleges Laguna

ICT | Senior High School | 2019 - 2021

- Graduated with Honors

#### ORGANIZATIONS

##### JPCS Student Chapter

Member | Mapúa MCL | 2023 - 2024

##### Junior ACM Student Chapter

Member | Malayan Colleges Laguna | 2019

##### Agile Project Management

Google | Feb 2025

- Skills:** Agile Project Management · Problem Solving · Coaching · Scrum · Influencing

##### CompTIA IT Fundamentals (ITF+)

CompTIA | Jul 2024

- Skills:** Database Fundamentals · IT Concepts · Programming Concepts · Software Development

##### Machine Learning Algorithm

Great Learning | December 2024

- Skills:** Machine Learning Basics · Naive Bayes Algorithm · Linear Regression Technique · Supervised Learning · Random Forest Algorithm · K-Nearest Neighbors (KNN)

# KANE JUSTINE COMETA

San Pedro, Laguna, 4023 | [cometakanejustine@gmail.com](mailto:cometakanejustine@gmail.com) | +63 9213259656 | [Linkedin](#)

## PROJECTS

### Web-based Institutional Research Repository

Thesis Project | August 2024 - March 2025

- Developed a fully-functional website using Python Flask and Dash, React JS, and PostgreSQL.
- Performed data preprocessing using python libraries (Pandas and NumPy)
- Integrated user-friendly interface for managing and visualizing institutional research data.
- Utilized Git for version control and collaborated with others via GitHub.

### Procurement and Inventory Management System

Academic Project | Dec 2023 - June 2024

- Developed a software application using C# and SQL.
- Integrated a simple user interface to facilitate company daily tasks (procurement and inventory management).
- Utilized Git for version control and collaborated with others via GitHub.

### "Final Revelation": Maze Game Software Application

Academic Project | Mar 2024

- Developed a game-based software application using Unity game engine and MySQL.
- Integrated an interactive user interface which can be controlled using keyboard.
- Utilized Git for version control and collaborated with others via GitHub.

### "Money co.": E-Money Sending Mobile Application

Academic Project | May - June 2023

- Developed a simple android application using C#, Android Xamarin, and MySQL.
- Integrated a simple user interface for managing user finances (e-money) using the mobile application.
- Implemented OOP concepts such as Class/Object/Methods, Encapsulation, and Abstraction.

## VOLUNTEERING

### Creatives Associate

Mapúa MCL Cup 2023 | Jan - Feb 2023

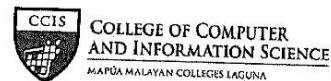
- **Role:** Creating event publication materials for social media posting and printable assets

### Technical Committee

MCL-CGC Mental Health Awareness Month 2021 | Sep - Oct 2021

- **Role:** Creating and Managing event publication materials, event technical, and platform

## Appendix B Endorsement Letter



02 April 2025

**ATTY. ARLAN P. PROFETA**

Senior Vice President for Corporate Services, PetroEnergy

**THRU: MS. VANESSA G. PERALTA**

AVP for Corporate Communications and CIO, PetroEnergy

7<sup>th</sup> Floor, JMT Building, 1600 ADB Ave., Ortigas Business Center  
Pasig, Metro Manila

Dear Atty. Profeta,

The BS Computer Science program of Mapúa Malayan Colleges Laguna requires their students to undergo a Practicum program for a minimum of 324 hours during the third term of our academic calendar.

We would like to request that Mr. Kane Justine A. Cometa be permitted to have his training in your company. We believe that your company can provide the relevant exposure necessary for our students to achieve the intended learning outcomes for the BS Computer Science program. We are confident that he will be able to acquire the practical knowledge and skills expected from a Computer Science graduate which, in turn, would guarantee a continuous supply of CS professionals needed by your company.

We thank you for your favorable action and we look forward to a more meaningful linkage that is mutually beneficial to our students and your company.

With warm regards,

A handwritten signature in black ink that appears to read 'Jonalyn G. Ebron'.

**JONALYN G. EBRON**

BS Computer Science Program Chair

College of Computer and Information Science

Mapúa Malayan Colleges Laguna

jgberon@mcl.edu.ph  
(049) 832-4076

## Appendix C

### Practicum Acceptance



REVISION NO.: 00  
REVISION DATE: May 10, 2016

#### PRACTICUM CONFIRMATION AND ACCEPTANCE FORM

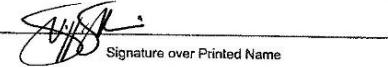
##### IMPORTANT INFORMATION

- STUDENTS ACCEPTED FOR PRACTICUM IN A HOST COMPANY WILL HAVE TO ACCOMPLISH THIS FORM.
- ASK THE PRACTICUM SUPERVISOR/ COMPANY REPRESENTATIVE TO FILL IN THE DETAILS OF THE TRAINING.
- SUBMIT TO THE PRACTICUM ADVISER/COORDINATOR PRIOR TO THE START OF TRAINING.

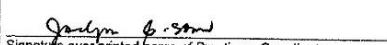
NAME OF STUDENT	<i>Kane Justine A. Conca</i>	STUDENT NUMBER	<i>2021160524</i>
COURSE CODE	<i>CS199F</i>	SY/TERM ENROLLED	<i>2024-2025 / 3rd Term</i>

This is to certify that Kane Justine A. Conca (name of student-trainee) has been accepted for practicum at PetroEnergy, 7<sup>th</sup> floor, JMT Bldg., 1600 ADB, Ortigas Business Center (name and address of establishment) and will be attached to the PetroEnergy department/s for a minimum of, but not limited to 324 hours. Training will commence on April 28, 2025 and is expected to end on June 30, 2025. Attached is the list of requirements.

##### COMPANY REPRESENTATIVE

 <i>J. M.</i> Signature over Printed Name	<i>CIO</i> Official Designation
<i>IT</i>	Email and Contact Number/s <i>vjperalta@petroenergy.com.ph</i>
Department	Date <i>4-23-2025</i>

##### NOTED BY

 <i>J. M.</i> Signature over printed name of Practicum Coordinator	<i>4-23-2025</i> Date
--	--------------------------

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA 030B

THIS FORM IS AVAILABLE AT THE OVPAA.  
REVISION NO.: 00  
REVISION DATE: May 10, 2016



#### PRACTICUM CONFIRMATION AND ACCEPTANCE FORM

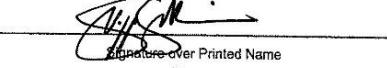
##### IMPORTANT INFORMATION

- STUDENTS ACCEPTED FOR PRACTICUM IN A HOST COMPANY WILL HAVE TO ACCOMPLISH THIS FORM.
- ASK THE PRACTICUM SUPERVISOR/ COMPANY REPRESENTATIVE TO FILL IN THE DETAILS OF THE TRAINING.
- SUBMIT TO THE PRACTICUM ADVISER/COORDINATOR PRIOR TO THE START OF TRAINING.

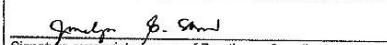
NAME OF STUDENT	<i>Kane Justine A. Conca</i>	STUDENT NUMBER	<i>2021160524</i>
COURSE CODE	<i>CS199F</i>	SY/TERM ENROLLED	<i>2024-2025 / 3rd Term</i>

This is to certify that Kane Justine A. Conca (name of student-trainee) has been accepted for practicum at PetroEnergy, 7<sup>th</sup> floor, JMT Bldg., 1600 ADB, Ortigas Business Center (name and address of establishment) and will be attached to the PetroEnergy department/s for a minimum of, but not limited to 324 hours. Training will commence on April 28, 2025 and is expected to end on June 30, 2025. Attached is the list of requirements.

##### COMPANY REPRESENTATIVE

 <i>J. M.</i> Signature over Printed Name	<i>CIO</i> Official Designation
<i>IT</i>	Email and Contact Number/s <i>vjperalta@petroenergy.com.ph</i>
Department	Date <i>4-23-2025</i>

##### NOTED BY

 <i>J. M.</i> Signature over printed name of Practicum Coordinator	<i>4-23-2025</i> Date
---	--------------------------

COPY: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

FORM OVPAA 030B

THIS FORM IS AVAILABLE AT THE OVPAA.

## Appendix D Liability Waiver



REVISION NO.: 00  
REVISION DATE: May 10, 2016

### STUDENT TRAINING AGREEMENT AND LIABILITY WAIVER

#### IMPORTANT INFORMATION

- THIS FORM IS TO BE ACCOMPLISHED AND SUBMITTED BY STUDENT TRAINEE TO THE PRACTICUM ADVISER BEFORE STARTING THE PRACTICUM.
- READ AND UNDERSTAND THE PROVISIONS OF THIS AGREEMENT AND WAIVER.
- ENSURE THAT ALL SIGNATORIES SIGN THE FORM.

I, Kane Justine A. Coneta, and a student of MALAYAN COLLEGES LAGUNA (hereinafter referred to as "MCL", do hereby voluntarily undergo on-the-job training at PetroEnergy, hereinafter referred to as the "Host Company", located at 7<sup>th</sup> floor, JMT Bldg., 1600 ABB, Ortigas business center, under the following terms and conditions:

- a. That the practicum training will commence on April 26, 2025 and ends on June 30, 2025 and will have to complete a minimum of 324 hours required for the on-the-job training;
- b. That I shall observe proper decorum and act professionally at all times and abide by the Company's rules and regulations and comply with those imposed for the training program, otherwise, I shall be excluded from further participation;
- c. That in the course of my training program, I may have access to information which may be of confidential in nature and proprietary to the Company, for which I may be required to execute a confidentiality and non-disclosure agreement as a prerequisite to my participation in the training program;
- d. That the time I will spend on the training program in the completion of my on-the-job training requirements will not and should not be interpreted or construed as working hours and should be regarded as non-compensable. Provided that, the Company may, as a unilateral act of liberality or generosity on their part, provide me with meal, travel, transportation allowances, accommodations, etc.;
- e. That I fully understand that notwithstanding the allowances enumerated in the preceding section which I may receive, there exists no labor-management and/or employer/employee relationship between me and the Company where I will undergo my training;
- f. That I shall exercise due care and diligence in the tasks assigned to me and personally be made answerable for any and all liabilities for damage to property or injury to third person, which may be occasioned by my intentional or negligent acts during the course of my on-the-job training;
- g. That I shall likewise hold the Host Company and MCL free and harmless from any and all liability and responsibility for any sickness or injury to myself and third parties and damage to property which I may sustain and/or may occur at any time during the training program, including time spent in traveling to and from any and all premises and locations where I may be required to go to as part of my training program;
- h. That the Company reserves the right to discontinue my training on reasonable grounds upon written notice to MCL and myself. Additionally, in the event my training program is discontinued for reasons attributable only to myself, I may be made to reimburse the Host Company for any/all the allowances, stipends, etc., which I may have received from them during and prior to the termination of my training program;
- i. That in addition to my liability under section g and for the pre-termination of my training program provided for under section h hereof, I may be subjected further to disciplinary action in accordance with the school's student manual and/or be a ground for disqualification from graduation;

Signed on this 23rd day of April.

KANE JUSTINE A. CONETA  
Signature over printed name of Student Trainee

#### WITH OUR CONSENT:

\_\_\_\_\_  
Signature over printed name of Parent/Guardian  
(for minors only)

#### NOTED BY:

Joseyn G. Sison  
Printed Name and Signature of Practicum Adviser/ Coordinator

\_\_\_\_\_  
Printed Name and Signature of Host Company Representative

## Appendix E

### Training Plan



REVISION NO.: 00  
REVISION DATE: May 10, 2016

#### TRAINING PLAN

NAME	Kane Justine A. Camora	COURSE CODE	CS199F
PROGRAM & STUDENT NO.	CS / 2021160524	COURSE TITLE	CS PRACTICUM

#### STUDENT OUTCOMES

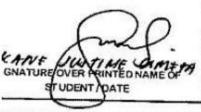
- CO1. Identify, analyze, and recommend solution to the computing problem being faced by the organization
- CO2. Apply the different concepts in Computer Science in dealing with the problem-solving process of the organization, and
- CO3. Acquire new knowledge and experience while in the organization

#### AREAS / PHASES OF TRAINING AND TIME ALLOTMENT

- Phase 1: Project Setup and Data Familiarization (48 Hours)
- Phase 2: Data Modeling and System Design (96 Hours)
- Phase 3: System Development and Implementation (120 Hours)
- Phase 4: Documentation and Training (60 Hours)

#### EVALUATION GUIDELINES & COURSE OUTCOMES

DEMONSTRATION OF SOFT SKILLS (40%)		DEMONSTRATION OF TECHNICAL SKILLS (60%)
<p><b>KEY AREAS</b></p> <p><b>COMMUNICATION SKILLS (20%)</b></p> <ul style="list-style-type: none"> <li>Relate to co-trainees/supervisors terminologies and rules</li> <li>Explain procedures and instructions needed for the tasks</li> <li>Identify and describe safety signs and symbols</li> <li>Ask critical questions related to the tasks</li> <li>Produce well-written regular and incident reports</li> <li>Prepares and presents reports using Information and Communication Technology (ICT)</li> </ul> <p><b>PROFESSIONAL DEPORTMENT (20%)</b></p> <ul style="list-style-type: none"> <li>Observes proper grooming and attire</li> <li>Reports to work regularly on time and as necessary, even beyond prescribed working hour</li> <li>Works according to the job description given by the company</li> <li>Willing to accept new tasks apart from the usual routine and responsibilities</li> <li>Delivers quality output on time</li> <li>Demonstrates respect for different individuals</li> </ul> <p><b>INITIATIVE (+5%)</b></p> <ul style="list-style-type: none"> <li>Volunteers to perform tasks beyond routine tasks</li> </ul>	<p><b>KEY AREAS</b></p> <p><b>Database Modeling and System Design (20%)</b></p> <ul style="list-style-type: none"> <li>Demonstrates understanding of database normalization and relationships</li> <li>Incorporates business requirements into system design effectively</li> </ul> <p><b>System Development (15%)</b></p> <ul style="list-style-type: none"> <li>Writes clean, maintainable, and well-documented code</li> <li>Implements core features based on project specifications</li> <li>Effectively uses version control (e.g., Git)</li> </ul> <p><b>Data Analytics and Visualization (15%)</b></p> <ul style="list-style-type: none"> <li>Uses data visualization tools effectively</li> <li>Identifies meaningful patterns and trends from data</li> <li>Communicates insights clearly through reports or dashboards</li> </ul> <p><b>Documentation (10%)</b></p> <ul style="list-style-type: none"> <li>Produces clear and structured technical documentation</li> <li>Ensures documentation is understandable by both technical and non-technical stakeholders</li> </ul> <p><b>Initiative (+5%)</b></p> <ul style="list-style-type: none"> <li>Volunteers to perform tasks beyond routine tasks</li> </ul>	

CONFORME	CONSENT (FOR MINORS ONLY)	NOTED BY	ENDORSED BY	APPROVED BY
 KANE JUSTINE A. CAMORA SIGNATURE OVER PRINTED NAME OF STUDENT / DATE	SIGNATURE OVER PRINTED NAME OF PARENT OR GUARDIAN / DATE	 SIGNATURE OVER PRINTED NAME OF PRACTICUM SUPERVISOR / DATE	 SIGNATURE OVER PRINTED NAME OF PRACTICUM ADVISER / DATE	 SIGNATURE OVER PRINTED NAME OF PROGRAM CHAIR / DATE

\*Y: (1) STUDENT; (2) HOST COMPANY; (3) PRACTICUM COORDINATOR

05-02-2025

**FORM OVPAA-030D**

THIS FORM IS AVAILABLE AT THE OVPAA.

## Appendix F

### Complete Weekly Journal (April 28 – July 9)



REVISION NO.: 00  
REVISION DATE: May 10, 2016

#### DAILY JOURNAL

##### IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC.
- SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.
- HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

DATE	April 28, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Project Kick-off and Scope Definition	SHIFT/TIME	8:00 AM - 5:00 PM / WFH

We already have assigned team members for each phase in the project development, but everyone is expected to participate on each phase. This strategy aims to have specific key personnel assigned to lead on each phase, while involved in the entire development process and to have a background in the succeeding phases. I am assigned to lead in phase 2, which involves data modeling and system design. For the phase 1, I have started reviewing the provided excel file for the team, which contains detailed reports in the different area of interest in the company. These areas includes economics, employment, social, environment, and corporate governance, which also includes the summary of finding on each area. Specifically, the risks identified and the appropriate management approach, given the detailed reports provided on each area. Upon reviewing the excel file, I have partially understood that the reports from each area contains data that ranges from year 2019 to 2024. At the same time, I have curated some questions regarding the provided excel file to further clarify some parts that requires some explanation and enlightenment to the team members. Questions and clarifications are crucial for us to produce meaningful output for our training. These questions will be entertained by the host company in the next scheduled meeting. For now, our task is to review the given data to provide an overview of the project outcome, in preparation for the development in the next phase. In line with the development phase, we also need to have knowledge about the existing system of the host company that might be improved or reproduce into a different type by team. Also, providing the tools and programming languages that they are currently for our perusal. These information is crucial for the technology research and selection.

  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TRINEE'S SIGNATURE



## DAILY JOURNAL

### IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC.
- SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.
- HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

DATE	April 29, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Data Familiarization and Analysis	SHIFT/TIME	8:00 AM - 5:00 PM / WFH

In continuation with the review and initial analysis of the given excel file, I obtained in-depth information of the provided excel file which contains multiple sheets of the different areas in the host company. Although some parts of the excel file requires a walk through explanation from the host company, I have successfully drafted my initial understanding through analysis and research. The CSV sheet contains overview of the company initiatives, negative impact, and management approach to the given impact. It also includes the capacity of each renewable energy plant which includes solar, wind, and geothermal, as well as the total power that is generated per hour on the following plants from 2019 to 2024. The Econ sheet contains the company gross profit and expenditures from each sector over the years from 2019 to 2024. The HR sheet contains the employee population based on employee type, status, gender, age, programs involved from 2023 to 2024. It also includes the list of employee benefits, percentage of covered benefits for both male and female employees and percentage of female employees who availed the company benefits. The Social sheet contains the company ethical and social considerations which talk about health, safety, human rights, satisfaction, and privacy from 2019 to 2024. It also includes the ethical considerations of the host company when approving suppliers. It also includes the affected social issues within the projects of the host company, as well as the appropriate mitigation solutions. So far, these are all things that I have discovered while going through the excel file partially. While having an in-depth review, I have listed all my questions regarding the company terms and acronyms utilized in the excel file. From my initial analysis, I have gained partial knowledge about the things that the company consider to track all resources going in and out of the host company such as the generated resources, manpower, and procurements.

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DATE	April 30, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Data Familiarization and Analysis	SHIFT/TIME	8:00 AM - 5:00 PM / WFH

To complete the review and analysis of the provided excel file, I have further obtained information on remaining of the excel file. The Envi sheet contains company resources procured which includes energy and water, as well as the plant waste generated such as gas emissions and water effluents from 2022 to 2024. It also includes some remarks about the increase in certain consumptions. While analyzing the sheet, I noticed some terms that I'm not familiar with such as PWEI, MGI, and PSC. I'm planning to ask these terms to the host company in the in-depth data gathering to further explain the data. The Corp Gov sheet contains company data regarding the dissemination and practice through trainings, as well as incidents of neglecting corporate government policies. It also includes the data regarding the environmental compliance such as the fines, sanctions, and resolved issues obtained by the host company. The sheet contains data from 2019 to 2023, with specific quarters in 2022. Lastly, the Procurement sheet contains company data regarding the assessment with the suppliers in compliance with the three areas which includes the environment social, and economic. The way of the host company assessment includes the criteria, metrics is how they will measure the criteria, and unit of measurement is what specific things they need to look for to measure the criteria. So to wrap up the review and analysis of the sheets contained in the excel file, I have some overall observations with regards to some parts of the data. As I noticed, there are columns in some of the sheets that contains risk identified and management approach, as well as opportunities identified and management approach. Which I believe that are the things that must be the identified possible risk to the certain section and the appropriate solution using management approach. While the other one includes the identified possible opportunity to the certain section and the appropriate solution using management approach. Although I have some questions if the risk and opportunity identified, and the management approach based on the identified risk and opportunity for the given span of years, given the data from 2019 to 2024.

  
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DATE	May 2, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Project Kick-off and Scope Definition	SHIFT/TIME	8:00 AM - 5:00 PM / WFH

To provide orientation to the host company, as well as the project scope, they have organized a plant visit for the practicum students in their solar farm in Tarlac city. The host company provided transportation for the student going to the plant and going back to the company, as well food for each participants. The orientation started by discussing the history of the host company, on how it started from a small oil company to a wide range renewable energy plant across the country. Which includes the solar farm, geothermal plant, as well as the wind turbines that are located in Tarlac, Batangas, and Aklan respectively. After the orientation, we took a quick tour in their water tower, to provide a 360 degree view of the solar farm from the top. The solar farm is divided into two phases which is the basis of the construction of the solar panels in the area. After that, we proceed to their control room to provide information on how they monitor the solar panels through their integrated system that measures the generated amount of electricity for each group of panels. They are currently storing the collected data through a physical server located within the control room, then it will generate a CSV file that will be used for generating reports. After the tour, we then go back to their conference room to discuss the initial project scope which includes a centralized web application for the reports. They mentioned that the reports are emailed directly to the higher ups from their different plants in the country, which are most likely flooded with emails of the reports. They are suggesting to have a central platform or a dashboard for viewing all the reports from each of their renewable energy plants in a website. The team discussed the possible tools for developing the website which includes the front-end and the back-end frameworks. The project scope is not yet finalized and require further discussion and clarifications, which will be discussed in the next meeting with the host company.

  
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DATE	May 5, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Requirements Gathering and Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The whole team organized the project charter document that contains the scope and resources of the project which will serve as the basis for the project development. We decided to divide the task to the team members to fill in the content of the document. I was assigned to identify potential risks and issues while going through the project, as well as identifying some assumptions of the whole team to the project. Most of the identified risks and issues fall through tools, communication, security and privacy, software compatibility, etc. While for the identified assumptions, we assumed that the project progress of each phase must be reported to the whole team every now and then so that everyone is on the same page. Also, project progress must be presented to the management or the host company for feedback, concerns, and suggestions to keep a smooth flow of the project development. The finished project charter document will be presented to the host company tomorrow for confirmation, as well as alignment with the agreed scope of the project. After working with the charter document, I personally explore the possible tools that we will be using for the prototyping of the user interface using Figma. This will be a great opportunity to brainstorm sample design for creating the web application interface. The team lead for each suggest preparing for this week for the on-site reporting of the project documents, as well as collecting all the necessary data for project. The plan of the team for this week is to conduct data gathering from each department in the host company, as well as finalizing the technologies or tools that we will be needing for the planning phase and development phase. So far these are all the things we set for this week and hopefully we will be able to deliver the requirements on time.



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DATE	May 6, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Requirements Gathering and Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team 1 presented the project charter to the host company management, discussing the scope, resources, tools, as well as the expectations for the project development. The host company mostly agreed with the documented scope, as well as the deliverables and expectations for the whole project development. The team decided to split the data gathering procedure to the different departments in the host company. The team 1 is assigned to interview the person in charge for the reporting of each company operating sites, as well as the hr department. While the team 2 is assigned to interview the person in charge for the environment related for each operating sites, as well as the economics or the finance department. The team 3 is assigned to interview the person in charge for the social or the CSR of the company, highlighting the company initiatives, such as contribution to health, education, agriculture, and environment. The purpose of the interview is to provide information regarding the data that they working with, specifically the fields, data entry procedure, and reports of the company. We will be using these data for the data modeling in the next phase, which is the process of mapping out the flow of data in the company. Also, we are requesting for the raw data from each department which is an essential part in preparation for data warehousing. So far, we have a partial dataset from the generated electricity in the solar power plant. We will further collect the data from other plants in the following days for this week, together with the data from other department.

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DATE	May 7, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Technology Research and Selection	SHIFT/TIME	7:00 AM - 4:00 PM / ON-SITE

This is the first time that the team 2 came to the head office to report on-site, that's why we were welcomed and took a quick tour to their office. We also discussed the goal of our team for today, which is working on the project requirement specifications which includes both the product and the business requirements. As well as the tech stack recommendation for the framework and tools we need for the project development. We have reported these tasks to the host company and they have some corrections to the requirements, which are corrected right away. As for the tech recommendation, they are approved with the frameworks and they some recommendations with the tools that we will be using for the database and the hosting. We have initially recommended PostgreSQL for the database management, while for the hosting platform we mentioned either AWS or Microsoft Azure. The host company recommended that we use Microsoft Azure because the company previously used AWS but they migrated to Azure which they are already in full utilization. The host company considered the familiarity of the team with Azure, that's why AWS is the feasible option for both the database and the hosting platform. Also, the team 2 conducted an interview the person in charge for the environment and social responsibilities of the company, as well as the person in charge for the financial reporting of the company. The team 2 gained additional insights regarding the data that the two distinct departments are collecting to provide the appropriate reporting to the head office. We requested for the raw data they used to create the reports to provide more information on how we will present to the dashboard development. So far, these are all the tasks that the team 2 has accomplished for today.

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DATE	May 8, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Technology Research and Selection	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team 3 reported to the head office today for presentation of the observed data fields from the first dataset that was given to the team. The team presented to the host company for feedback to make sure that the development team and the stakeholders are aligned with the working data. This will be an essential preparation for data warehousing, but the official data fields will be presented to the host company once we have all the required data for each department. The host company raise some corrections with the provided data fields to ensure clarity and accuracy. Also, the team 3 coordinated with the IT department of the host company to talk about the development setup which includes the database and hosting platform. The team confirmed that we will be using AWS for the database and hosting of the working application. We will be using the free tier for the development phase, we will maximize the usage when we reach the testing phase which will inquire some additional charges. On the other hand, the team 2 analyze the collected dataset from the envi department yesterday. We noticed that the provided data shows only the environmental data for the Rizal Green Energy Corporation and the year end CSR reports, we requested for additional data regarding the environmental data from the main operating companies PWEI, MGI, and PSC. The environmental data contains the some of the operating consumption of resources which includes energy and water. It also includes the generated waste form each operating companies which includes hazardous and non-hazardous materials. Lastly, it includes the company initiatives to the environment, which includes tree planting, clean up drives, and recycling waste. This data is essential to the company to provide information of the company with the highest consumption rate, highest generated waste, and environmental activities conducted.

  
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COPY: (1) STUDENT; (2) PRACTICUM ADVISER

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DATE	May 9, 2025	AREA ASSIGNMENT	Project Setup and Data Familiarization
TASK	Requirements Gathering and Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The whole team decided to have a meeting to talk about our progress for this week, which are mostly related to our preparation for the next week. For this week, we have introduced our project plans, deliverables, and expectations to set up the scope of our work and serve as the guide of the team, as well as the stakeholders. We have successfully conducted data gathering to the host company departments to gather information regarding the data flow, required computations, and generated reports. Also, we have collected some of their raw data coming from the different department which contains data from each companies for the purpose of reporting. We have presented the business and product specification of the platform that we will be creating for the host company, wherein the goal is to develop a dashboard that contains rich data that they need for decision making. Also, the platform will contain a user interface to facilitate data entry on each department which will be stored in a dedicated data warehouse for the company related records. We have also specified the tools and frameworks that we will be using for the project planning, database management, and software development. To ensure that the tools and framework that we will be using are feasible to the company's current tools and framework. Our plan for next week is to establish the data warehousing which contains all the collected existing company records from different sources. We planning to use Medallion architecture approach which consist three-layers (bronze, silver, and gold). The team decided to divide the task for each data source in the three teams. The process will start loading the data into the database, performed data cleaning and standardization, as well as creating views and build relationship among the data source tables.



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DATE	May 13, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Data Modeling and Database Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team one presented the data warehouse architecture to the host company that shows the steps or layers of the whole process. The first stage is the bronze layer that aims to load the raw data sources into the database tables without doing any data manipulation or standardization. The second stage is the silver layer that aims to conduct data cleaning, cleansing, and standardization which will prepare the data on the next stage. The last stage is the gold layer that aims to create table views and functions for filtering data in the dashboard. The team also reported our software development methodology using the scrum agile methodology for purpose of constant reporting of updates and gathering immediate feedback from each of the sprints. This is an essential consideration to our short training period of two months, that is why we are maximizing our time by producing our outputs immediately while ensuring quality. The whole team started constructing the bronze layer for each data sources power plant, csr, econ, and envi. I have started creating data definition language sql file for the envi data source by creating database tables under the bronze layer which is the first stage. Followed by creating a stored procedure from an sql file that contains the scripts for loading the csv files into the database tables. There are a total of nine tables created under the envi data source showing the consumption and waste generated data from each selected company. The team two will be reporting the resulting fields and data types from each table by tomorrow. Also, we will be presenting the silver layer of the data architecture, showing the documented data cleaning procedure in the data source tables.

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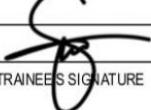
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DATE	May 14, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Data Modeling and Database Design	SHIFT/TIME	7:00 AM - 4:00 PM / ON-SITE

The team two presented the data fields, as well as the data types for each data source tables to the host company. The host company suggested some clarifications with the provided field names to make it more aligned with the company terms. The team considered these changes together with the confirmation of the data types and appropriate data definition. The team created the database schema for the bronze layer in postgresql to load the organized csv files on each table. Considering that the whole team divided the data source on each phase teams, we decided to create separate ddls for each sources After we organized the raw data into separate tables having proper ids for each record, it is now ready for data preprocessing on the next stage which is the silver layer. The data cleaning procedure handled white spaces, inconsistent data formats, and negative values for each data source tables. While we are working with the silver layer, Ma'am Vanessa approach the team two regarding further inclusion to the data table under the environment activity, aside from recording the general details of the activity. The host company would like to include the budget allocation for each activity. This will provide an essential details for the budget utilization under the environment activity for each company. Also, they would like to add a separate table for the fund allocation to the community which is being collected from 1% of the company income from the total power generated for each company. The fund allocation includes the breakdown for community initiatives which includes electricity, livelihood, and environment. After the short meeting, the team continued working with the silver layer. The data from the previous layer was used from the data processing stage, and we have only identified plenty issues in the data source since some was solved in the organization part. The cleaned data source was stored on separate schema in preparation for the next stage which is the gold layer.



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DATE	May 15, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Data Modeling and Database Design	SHIFT/TIME	7:00 AM - 10:00 PM / WFH

The team continued working on the silver layer for each data source, each table required analysis of what type of data does the fields contain. This is essential to understand how the data is going to be used for visualization and reports that best represents the company data. Some tables required removing some white spaces, data standardization, and handling missing values, which are specifically addressed in the silver layer. The team successfully processed some data sources in the silver layer stage, the resulting data are stored in a separate schema from the database. The data from the silver layer are used in the next stage, which is the gold layer. The output for this stage is to create views from each table, which includes the process of properly renaming all the column names with complete label. Some of the column names contain aliases which are not presentable for display, that is why it is necessary to change them into a more readable format. Another output for this stage is to create table functions to facilitate filter queries with corresponding parameters such as month, quarter, and year. These functions will be used to handle filter functions in the front end interface by passing SQL statements to the database. Some teams worked on the gold layer on their respective data sources, while other teams are still working on the bronze and silver layer with some changes with the data fields. We opted to extend our working hours to finish all the prerequisites for today, our goal for tomorrow is to finalize all the outputs, in preparation for next week. There are some slight delays with the deliverables but I think we will be able to finish the database warehousing this week.

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DATE	May 15, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Data Modeling and Database Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team required further clarifications and inquiries with the host company regarding the data definition and composition. Full understanding of the data is critical to the team while working with the data warehousing architecture, we must be familiar with the recently collected data from the host company. The team encountered some delays while finalizing the bronze and silver layer due to some further inquiries that needed to be addressed with the host company. Specially, data fields with missing formula for direct computation in the database such as the CO2 avoidance for each plant which contains a unique constant value. In the gold layer, these formula are required to be included for each table which critically address the all the required business data for the company reporting. On the other hand, some team members already finalized the fields from bronze to silver layer and successfully created all the required table views and functions. In the afternoon, the team conducted an online meeting with the host company to discuss the current progress with the gold layer. We presented the initial queries for the envi, econ, and csr data source from the database, while other teams took the opportunity to input their inquiries with the host company. Based on the presented sample data for reporting, they are satisfied with the filtering methods we did to present the data. We will follow up the remaining data source in the next meeting with team one. In preparation for next week, I created sample user interface mock ups for the upcoming software development phase.



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DATE	May 19, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	User Interface (UI) Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team started brainstorming for the design and layout of the website user interface, we also suggested a logo for the interface which is aligned with the existing company logo. We noticed that each company logo is aligned with the original logo of the host company, which is mixed of black, blue, and green colors. The interface layout is more of a minimalist and clean with compact contents which is suitable for dashboards and tabular data view. We include a landing page which will serve as the main entrance of the website, which includes disclosed contents of the host company as well as the purpose of the website. The user interface also includes a login page for all types of users from each company and the head office, wherein each user has a different set of views and functions. Functions includes encoding company data into the website, approving the encoded data by ensuring the correctness and appropriateness, viewing the data from the dashboard to generate insights and decision making. Also, it includes database and system admin roles for ensuring the security of the stored data, as well as monitoring user activities in the website. On the other hand, other team members worked on constructing the overall entity relationship diagram to map out the connections between database tables from each data sources. We connected all the tables from each source using a central table for the company information which connects some of the tables with company\_id. While connecting the database table, we encountered some issues regarding the field lengths, which must be changed according to the majority of the data tables. This is highly important to makes sure that the data fields or columns are aligned accordingly.



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DATE	May 20, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	User Interface (UI) Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team continued working the user interface, specifically identifying all the pages included in the website. The website consisted a repository page which will facilitate the tabular format view of the company data, as well as the platform for data entry process for adding records to the database. The page also includes option for updating specific record details, and approval status from company level approvers and executive level approvers. The page will be accessed by the encoders for each company operational sites around the country, and site-level approver and head office-level approvers that ensures accurate data for reporting to the main office. The website also includes a dashboard page for displaying company data through visual and analytics representation in charts, graphs, and key performance indicators. The page will be accessed by the higher ranking people or the executives of the company for generating insights and making informed decision. To ensure the website security, user access level, and backups. The team included a system admin page for managing user account status, role, and activities, as well as option for system backup and recovery. The page will be accessed by the trusted system admin from the host company. On the other hand, the team one presented the individual entity relationship diagram from each data sources, as well as the consolidated version which identifies the connection between the database tables. Although, the diagram requires further inclusions such as the table for audit trails which stores the user activities across the website.

  
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DATE	May 21, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	User Interface (UI) Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team two reported on-site and worked on the data catalog document, updated entity relationship diagram, and the first draft of the user interface design and layout. The data catalog document shows the overall database structure which consisted all the tables included for each data source, as well as the table columns its data types and length. The updated entity relationship diagram included other tables under system side such as the audit trails table and status table. The drafted user interface was made it more detailed for more emphasis with the content and layout for each pages. The team worked on these task this morning to finalize everything and to present the initial draft for immediate feedback. In the afternoon, the team presented the deliverables we did earlier starting from the update entity relationship diagram. The diagram helped the team to visualize the connections between the database tables which includes the tables on the system side. The host company approved the updated diagram. Next, the database catalog was presented and checked by the host company one table at a time. They mentioned that there are some table fields that needs to be changed for clarity and more accurate term. Next, the initial draft of the user interface was presented, which contains only the general or the expected pages of the website. The host company was delighted with the design and layout of the drafted interface, they mentioned that it matches with their expected layout which is clean and simple. There are some functions to include in the layout such as the export data in the repository page, as well as main dashboard that showcases their desired visualization for monitoring.



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DATE	May 22, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	User Interface (UI) Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team three reported on-site to present their part in the csr and economics data sources, as well as the preparation overview for the development phase. While for our team, we continued working with the revisions with the presented user interface yesterday from their initial feedback. We will be making the user interface mock up more detailed to presented the expected views and functions to the target users in the company. Other teams worked on refining their data reporting plan for energy and human resource data source. The on-site team reported the development plan for the next phase, we are planning to start next week once the user interface mock-ups is approved. The team have already created the initial development repository which consist of two separate environment for the front end and the back end codes. The team also presented the sample website view showing the development implementation, connecting the three structure which is the client side, the server side, and the database. On the other hand, we made the user interface mock up more detailed and realistic by showing sample data from the database, as well as adding interactions between pages from the sidebar navigation. We have also include button interactions for pages with modals to provide specific functions for each page, showing input fields for data entry and drop down components for changing approval status. The host company suggests adding dummy data for table views such as the user management page and the audit logs.

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DATE	May 23, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	User Interface (UI) Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team continued working with the enhancements and some additions to the user interface mockups to make it more realistic in a user perspective. We added placeholder for filters, navigation buttons, and function for data entry modals and export which shows the layout of the entire page view including the primary functions. Also, we included the sample data visualization view for each section to create the layout and placements of the charts and graphs in the dashboard. On the other hand, the team are still finalizing the database schema from bronze to gold to make sure that everything is covered from each sources. We noticed that while we are going through phase two, there are still some minor changes that we need to do in the database schema based on the feedback from the host company. The feedback from the stakeholders is essential to match their expectations with the end results of querying in the database, like the specific records that they want to see from the repository, up to the dashboard. According to them, they would like to show valuable and accurate data from the platform, that's why day-to-day changes with the schema is crucial for producing rich data that the company needs. We are planning to present our project with the higher ups or the executives of the company next week. Their feedback and suggestions as the users are highly important for us to understand how they would like to use and view the platform accordingly. Next week is mark of the end for phase two, we will start the next phase which is the development phase next month.

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DATE	May 26, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	System Architecture Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team conducted a meeting with the head office checkers and site encoders to discuss the initial user interface to the users. The purpose of the meeting is to provide feedback to the initial plan for the user interface before the team moves to the development phase. Their comments and suggestions are highly encourage in the meeting, providing essential details that needs to be covered in the project. During the meeting, they suggested adding more data to the specifics source such as the environment section. They would like to include air data from the MGI company, and we agreed to have the additional air data, as long as it will provided on time. The team and the stakeholders agreed to set a deadline in accepting data from the company to each data source. We are also considering the time period of our training in their company that's why we set some deadlines for us to focus on the data that we currently have. Processing new raw data and integrating to our newly created database is crucial, which might need for the team to extend the phase two until next week. Aside from new data, the stakeholders are suggesting the view from the export function for both the repository and dashboard. Also, they would like to export the list of data from selected KPIs into as well as for the filtered data from the repository. For the user interface, they would like the data visualizations to be viewed large enough for the users, which we are planning to have a function when the user specific dashboard, it will display in a modal. We will report the revised interface on Wednesday.

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DATE	May 27, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	System Architecture Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team worked on the revisions from the meeting yesterday with the head checkers and encoders, their feedbacks were considered and made some changes with the current approach. Through their comments and suggestion, we were able to refine our current progress to further improve our plan before the start of the development phase next week. Aside from working with the refinements, our task for today is to prepare for the presentation with the executives tomorrow. Our aim is to gather feedback to our initial plan from an executive perspective, which is one of the core feature in our project. We will present the overview of the project, which includes the people who will be working with the project. Followed by presenting our project phases and our current progress as of the moment, which is in the design phase. Followed by the targeted issues to be solved by the platform, as well as the key benefits to the executives of the company. Also, we will present our current draft for the user interface, showing the generated data visualizations and KPIs which are the expected views of the executive role. After that, we will be open for their feedback regarding our current plan for the platform. Their comments and suggestions are valuable to our project, which will bring more information that needs to be covered in the platform. We will present to the executive first thing in the morning, followed by progress reporting in the afternoon. We are planning to finalized all of our resources this week before we start the development phase.

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DATE	May 28, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	System Architecture Design	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

Today, we presented the overview of our project plan and our initial progress to executives of the company, looking forward for hearing their suggestions to our existing plan. Most of their feedback are regarding the improvements with the presentation of the dashboard contents such as the color and the visibility. Also, the executives pointed out some of the graphs we included in the dashboard, they would like to improve the labeling to make it more precise and understandable. For them, labels are meant to convey meaning easily to all types of people and not just the executives of the company. After the meeting, we worked on the system architecture design and some changes with the user interface based on the meeting with the encoders last week. For the system architecture, we are planning to integrate all the agreed discussed technologies in the previous meetings. In the client side, we will use React framework with Material UI and Recharts for the data management and the interactive dashboard. In the server side, we will be using Postgresql for the database, showing the system tables and the reference schema and the three layers bronze, silver, and gold. Also, we will be using python library Fast API for receiving http request and sending response to the client side. For the revised user interface, we include all the data entry modal for each data source tables showing the required fields for adding new record for encoders. We reported this in the afternoon for feedback, they mentioned adding some labels to the input modals for the encoders to have information of what they are trying to input.

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DATE	May 29, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Development Environment Setup	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

Today is the start of the development setup in preparation for next week, which is the start of the development phase. Our goal for the remaining days for this week is to align the team with the planned technologies that we will be using, as well as the setup for the database for each member. Everyone in the team must be aligned with the updates in the database schema, that's why we create backup files for any changes made in the database and we will restore eventually. For the technologies, we install all the necessary libraries and packages needed for the web development. Also, we ensured that these libraries and files are secured and reliable as a development tool. The team started the development setup by connecting the main components of the website which includes the database, and both the back-end and the front-end framework. The team successfully connected the components and tested the environment by creating sample data visualization using recharts which is part of the react component. We utilized the real data that we collected from the host company which was imported into the database to create the sample visualization. We also tried displaying the database data into the repository table, which is another feature for data viewing. The feature includes the import or bulk upload and the single adding of new record, as well as the export to excel data. The progress from the initial setup was presented to the host company in preparation for next week tasks for each team groups.

  
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DATE	May 30, 2025	AREA ASSIGNMENT	Data Modeling and System Design
TASK	Development Environment Setup	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

Following the successful setup of our initial development environment, the team have made great progress with our project. We upgraded our technology stack, refined our database operations with optimized queries and expanded system integration using advanced middleware to ensure smooth communication across the database, backend, and frontend. Also, the team developed a sprint plan which will serve as the basis for our project development task distribution for each team, as well as the start and end date for each task. The sprint plan highlights the major task labeled as high priority, while minor tasks are labeled either low or medium, although still holds significance in the development. For this development plan, we will be having only three sprints considering the tight schedule of the team. As much as possible, we will highlight the critical tasks which will be started early such as the repository page and the dashboard page. The team will distribute the task according to the assigned data source for the repository and the dashboard. While for the other features, such as the user management page, backup and restore page, and audit trails page are distributed for specific teams regardless of the assigned data source. The sprint start schedule will commence next week on Monday, which will continue and end at the last week of June which is according to the training plan.

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DATE	June 2, 2025	AREA ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team started with the development phase for this week, prioritizing the development of the critical features while creating an outline for the least critical features. Critical features include the repository page which contains functions such as the viewing of company data, data entry, import and export specific records, as well updating record details and approval status. The repository page is the main focus of each team with the different respective data source table for this week. Today, we are currently working on layout of the repository page according to the agreed UI interface during the mock ups. We are also preparing the table which will be used to display the company data in the interface. For the team 3 they started working with the login page and the landing page which will serve as the introduction to the website. The team also created the sidebar navigation panel component which will be displayed for each data source repository pages. To have a smooth flow for the development phase, each team assigned members who will be working with the front end or the user interface and who will be working with the back end or the APIs that will be handle the task for database queries. I was assigned in the front end development, which is my forte in the web development. For the envi team, I have created the user interface for the three separate pages under the environment section. I will be working with the rest of the user interface for the team for the rest of the development phase.

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DATE	June 3, 2025	AREA ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team resumed working with the web interface and essential features of the web application. For the envi team, we worked on the add record function which will be used to input single record to the website which directs to the database. To ease the user's burden of inputting large amount of the data to the system, we also include a bulk import function which will be used to import records with multiple rows. The team also integrate search and filter function in the envi section repository page to support user record navigation in the data table. Our goal for this week is to outline the major functions of the website, including the display of the data from the database. We will not cover much about the data validation, proper user prompts using modal, as well as the procedures in the website. These things will be covered in the next sprint which will commence next week once we have aligned everything this week. For us to finish everything this week, the whole team split up the workload for each team with different data source. The whole team is aware that there will be differences in terms of the execution of the functions for each team. As much possible, our work must be aligned with one another that's why we will curate the functions separately and decide which has the most efficient approach. This team strategy will ensure everyone to have different ideas on how we will establish the function. So far, most of the team are done with the import and single add record function from their respective parts.

  
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DATE	June 4, 2025	AREA ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The envi team reported to the head office today to present the updates from the envi repository page, as well as the mentioned early target completion for presentation to the higher ups. Before the reporting, the team worked on the fully functional import and export feature in the web application, as well as the left not functional add record in the diesel page. We also created the presentation for later to guide the reporting flow and to present the visual outcome of the team. During the presentation, the team shown the updated and revised dashboards under the environment section. The stakeholders noticed that the data are skewed due to lack of data from other companies. they can see that the leading company with the most data come from the Petrosolar Corp. Showing the current result of the graphs and charts, they think we must add more data to the database to show all the company data. To add more data, we are thinking of doing the bulk upload method wherein the user is given a sample CSV template which will be used to input the correct data that are acceptable by the web application. We gave the sample CSV template for the envi section to the stakeholders for them to input actual data from their respective companies. Aside from the dashboard, we presented the update from the repository page which includes the view, search, a filter record from the table, as well as add/import record to the database, and export data from the data table. We also mentioned the time constraint we have for the development of the web application to the expected go live on June 20th. As much as possible we will only finish all the critical functions such as the repository page and the dashboard, as well as the account management for separate user access. The rest of the functions will be done after the presentation date.



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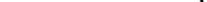
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DATE	June 5, 2025	AREA ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team continued with the development phase by implementing new features as stated in the project plan. The team worked on the update function for the envi team, which includes the APIs and the user interface. We will be able to finish the update function within this week and we will be working on the approval status update next week as well as the validations. Other teams are still working with the table accessibilities, as well as the add/import functions. According to the agreed features, we will only work on the critical features such as the repository page which is up to the approval status update. We will continue working with the low priority features after the target presentation date on the 3rd week of June.

  
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DATE	June 9, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The Envi team continued progress on the web application, specifically in repository page. Several key feature updates and interface enhancements were pushed throughout the day. The team focused on refining core functionalities. In the morning, the team updated the Envi module, including the implementation of the update function across electricity, diesel, water, and waste pages. This function was consolidated under the ViewEditRecordModal to streamline the interface. Meanwhile, the diesel module was enhanced with the completion of the single insert function. Additionally, options for company, source, metrics, and units were fetched from the API and dynamically loaded into the forms to support both the add and update processes. The menu source options were also updated accordingly. By midday, the View/Edit modal for energy records was added, and the add modals for ENVI were fixed. Functionality for direct export was introduced, and status updates were applied to relevant views. The repository and dashboard tabs were added to the sidebar, and initial help section elements were also introduced. In the afternoon, the ENVI component files were reorganized to maintain code structure. A restriction for future dates was implemented to ensure valid data entry. The first draft of the Envi Water dashboard was introduced, with key metrics and pie charts fetching live data from the database. Later, both API and component paths were adjusted and fixed to maintain integrity across the application. A new edit modal was introduced to improve record management. Additional functions were added to the action modal, specifically approve and reject buttons, to support user validation flows. In the evening, the HR dashboard was initialized, and the Power Generation dashboard was also scaffolded. Lastly, UI consistency improvements were made to the Economy page, alongside other minor bug fixes and interface cleanups. Overall, June 9 saw a high volume of progress toward stabilizing core functionalities, enhancing the data workflows, and preparing critical dashboards and components for the upcoming milestone on June 20.



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DATE	June 10, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team continued the development phase, advancing multiple dashboards and refining status management across modules. Significant progress was made on both frontend and backend functionalities to meet the expected June 20 milestone. The day began with the addition of the HR dashboard along with the new KPI card component, which provided a cleaner visual representation of HR data. The HR record form UI and functionality were also fixed to ensure accurate data entry. A single status update function was also added for these modules, ensuring users can manage approval workflows efficiently. Progress was made in the Environment Water Dashboard, where the company filter was connected to the database, the line chart API was applied, and logic was added to select all filters by default when none are explicitly chosen. Later in the day, the dashboard was completed using the stacked bar API and a new year filter API that dynamically adjusts based on available data. The line chart was further enhanced by enabling a year range filter, allowing flexible data exploration. Meanwhile, enhancements were made to the table component with the addition of checkboxes in the table head and body to support multi-selection workflows. The export data button was commented out from the dashboard, following agreement with stakeholders that this feature was of low priority. In parallel, work began on the Envi Energy Dashboard, where key metrics for both diesel and electricity were introduced. Though the data is currently static, filter functionality has been implemented, and the values are now dynamically loaded from the database to ensure flexibility and accuracy in future enhancements. The day concluded with the initial integration of the Economy dashboard. While the layout is still under refinement and one switchable chart is pending, the foundation has been laid. Filter functionality is in progress, and optimization is scheduled in the next phases. Altogether, June 10 marked a productive day with significant headway in status control, dynamic filtering, dashboard initialization, and visual enhancements across several key sections of the web application.

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DATE	June 11, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team focused on enhancing interactivity, bulk operations, and dashboard finalizations for the Environment section. The team made some improvements and data interaction functionalities were introduced, while work continued on dashboard components across modules. The day began with the implementation of table row selection for Envi records, supporting both single and multiple selections, including a "select all" option. However, the select all function only applies to visible rows on the page. This was followed by updates to pass selected record IDs to child components, enabling downstream features such as bulk status operations. Subsequent efforts were concentrated on dashboards. The Environment Electricity Dashboard was completed using backend APIs. Filters are now functional and affect the data visualizations interactively. While key metrics remain static to represent a general overview, charts and graphs dynamically respond to user inputs. The Diesel Dashboard layout was also initialized, and initial pie chart visualizations were added using live data from the API. Further enhancements included bulk status update functions for energy pages (electricity and diesel) as well as water and waste modules. A confirmation alert system was added for both single and bulk status approvals, improving user assurance and validation before critical changes. Meanwhile, pagination in the Envi table was updated for smoother navigation of larger datasets. The team also added a refresh button to the Energy and Water dashboards, allowing users to re-fetch the latest data in real-time which specifically requested by the client. The Date and Time indicator was also integrated into the dashboards for improved data traceability and awareness. The development of bulk insert templates for Energy records was initiated, and work started on the Environment Waste repository layout. The Water and Energy dashboards are now finalized while the Diesel and Waste nearing completion.

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DATE	June 13, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team continued refined interactive components, enhancing dashboard flexibility, and expanding routes for HR and economics modules. Several backend and frontend improvements were implemented to ensure consistency and data responsiveness across the system. The day began with the addition of new routes for HR Employability and Safety & Health sections, along with dummy data for Employability to support layout development and initial testing. Checkbox interactions in the Envi table received refinements, improving the selection logic for individual checkboxes to ensure more accurate and user-friendly record manipulation. One of the most significant improvements of the day came in the form of dynamic KPI updates on the Water and Energy Dashboards. KPIs, which previously displayed static overview data, are now dynamically adjusted based on user-selected filters—providing more accurate and real-time insights from the available dataset. Further progress was made on the Waste Dashboard, where dashboard filters were successfully loaded, laying the groundwork for complete interaction and data visualization in this final Envi module. Additional updates included improvements to the Help Repository section, ensuring users have access to updated guidance, and a critical fix to the Waste module. Specifically, new numeric fields for waste generated, waste disposed, and waste were introduced, resolving recurring errors experienced when editing waste records. To wrap up the day, the Economic Dashboard gained an export functionality, adding value to the reporting workflow by allowing users to extract and share key economic data easily.



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DATE	June 16, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team addressed chart enhancements, export logic, and usability across dashboards and data workflows. Charts were modified for responsiveness by renaming labels for clarity such as the quarterly data by waste type. Optimizations were applied to parameter handling and chart logic to improve performance and reliability. The Export Data feature for the Envi section was significantly upgraded. The logic was enhanced so that selected checkboxes control the data to be exported, the bulk export is triggered if no specific record is checked or all are selected, while a single/multi-export is triggered when one or more checkboxes are selected manually. Optional checkboxes were also introduced to the table component, now configurable per page, with Econ pages disabling them by default to simplify the user interface. Other key data interactions were improved, including a fix for the record approval problem, ensuring smoother status updates. Additionally, a refresh mechanism was added when inserting bulk data via the import modal. A confirmation message now appears during the process to enhance clarity and feedback. In the Energy section, progress included updates to pagination that now display results while validations and UI prompts were introduced to assist users when input data is incomplete or invalid. The Status Chip component was also fixed and verified to display the correct color coding for statuses across all relevant pages, including energy and power plant sections. On the Economic module, tabs were added to unify all Econ pages under a single integrated view, following the format used in the Envi dashboards for consistency. This restructuring supports easier navigation and better scalability. HR also saw several key developments, including the integration of charts with zoom capabilities, updates to the update function, and refinements in HR routes. These set the foundation for a more interactive HR analytics interface. To further enhance UX across the system, loading animations were upgraded across all pages, contributing to a more responsive and polished experience. By the end of the day, work continued on the Energy dashboard layout, where components from the Envi dashboard were reused to ensure design consistency. Chart layout fixes were underway, and work on CSR bulk upload was also pushed to completion.



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DATE	June 17, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team further improved interactivity and dynamic feedback to route protection and layout refinements. The sidebar and routing system received substantial updates, fixing most broken routes and introducing a toggle between Dashboard and Repository mode via a dashboard button. This also included loading animations for the Economic repository and UI inversion effects when switching modes. Significant work was also done on chart systems, particularly in the Envi Waste section where chart responsiveness, label clarity, and quarter-based breakdowns were introduced. All charts under this module were completed, and refinements were made to layout, color schemes, legends, and filter responsiveness. Similar layout and label fixes were also implemented for Power Generation charts. On the export functionality, filenames were improved to be section-specific and include timestamps, enhancing clarity and traceability for downloaded reports. New prompt modals were introduced across all Envi sections for single data entry, now covering confirmation, success, error, and validation prompts. Restrictions were also implemented for numeric inputs which disallows negative, zero, or non-numeric values. Multiple UI enhancements were introduced including pagination indicators, approval modals with checkboxes for multi-record approval, and revised approval/revision flows in Envi modals. The MultiSelectWithChips component was added to filters for Water and Energy dashboards, allowing multi-selection capabilities. A new dashboard combobox component was also introduced to support single-value selections where appropriate. In the HR module, bulk insertion functionality was introduced, further streamlining data management. In the CSR module, bulk status update and improvements to the Help repository were implemented. Filters were refactored to pull from more appropriate data sources, ensuring accurate and scoped program/project dropdowns. Security also saw critical improvements with the addition of login and logout services, including: Local storage of access tokens, Route protection logic that checks authentication before allowing access, and Automatic logout on token expiry. Finally, the day wrapped up with finishing touches on the Energy dashboard layout and ongoing chart layout fixes, ensuring both function and form are ready for the upcoming release.

  
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DATE	June 18, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team focused on improving interactivity, enforcing validation rules, and unifying the dashboard structure for deployment readiness. The Dashboard Overview also took shape with the creation of the EnviOverview component and new departmental sections within Dashboard.jsx, providing a centralized view for all modules. Scrollbars were removed for a cleaner interface, and the overview dashboard title was updated from "PETRODASH" to "OVERVIEW". To reduce visual clutter, the Water and Energy dashboards were resized to 80% screen width, and chart label formatting was adjusted throughout the platform. Additional validation was implemented in record editing to allow decimal values while disallowing letters, negative numbers, and zeroes—ensuring data integrity in numeric fields. Security and access control were strengthened by integrating multiple pages with the ProtectedRoute component. Role-specific access was defined for repositories and dashboards (Water, Energy, Waste), and error messages were added for unauthorized users (i.e., when role IDs are not R02 or R03). This safeguard now ensures that only users with proper roles can access sensitive dashboards and records. Bulk operations were expanded to include a "bulk revise" feature via checkboxes in the Envi modal. Edit/Save buttons were hidden when entries were "Under Review" to avoid unauthorized changes during verification. Meanwhile, multi-filter functionality (company, waste type, metrics, and quarter) was added to the Envi Waste dashboard, enhancing the depth of data interaction. Several layout and component improvements were completed: Final layout and responsiveness for the Energy dashboard, Updates to the HELP dashboard, including graph layouts and dashboard switching views, and Refinement of the Dashboard Header design, including removal of excess charts following feedback In terms of usability and export options, chart labels were adjusted, and the dependency html-to-image was installed to support chart image downloading. With multiple enhancements spanning charts, security, bulk actions, layout, and filtering, June 18 showcased the team's commitment to fine-tuning user experience and ensuring a reliable system foundation for launch.



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DATE	June 19, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team addressed UI and layout issues across various modules. Enhancements included KPI layout fixes and investment chart integration in the HELP section, UI improvements and ZoomModal integration across Water, Energy, and Waste dashboards, and responsive redesigns using consistent components like DashboardHeader. Multiple modals were added for confirmation, error handling, unsaved changes, and remarks requirements, while numeric input restrictions and chart optimizations ensured better validation and data visualization. ProtectedRoute logic was expanded with role-based access for repositories and dashboards, and secure authentication using token-based context was implemented to enhance login workflows. The Economic, HR, and Envi sections saw significant dashboard and repository updates—including modularized charts, new overview components, zoom capabilities, and consistent styling across views. Additional updates included multi-filter support, dynamic export metadata, sidebar behavior fixes, and minor branding changes like the updated website logo. These cumulative efforts brought the system into a production-ready state, consolidating visual, structural, and functional elements in preparation for deployment.

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DATE	June 20, 2025	AREA ASSIGNMENT	System Development and Implementation
TASK	Application Development	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team development focused on refining data validation, visual clarity, and user interface behavior across the platform. A new indicator was introduced in the Envi section to clearly signal that Approved Records cannot be edited, ensuring users are aware of status-based restrictions and preventing accidental changes to finalized entries. Pagination features in Envi were also improved which offers dynamic typography element was added to display the number of selected rows, giving users real-time feedback for bulk actions like approve, revise, or export. The HR dashboard was adjusted to fit the screen more efficiently, with metadata removed from the Employability module to declutter the layout and improve focus. In the Envi Diesel module, critical fields such as property and type were made read-only, aligning with permission control and preventing unintended edits to classification details. These changes, though subtle, reflect a strong emphasis on data protection, visual feedback, and layout optimization, laying further groundwork for stability and usability before the platform's full release.



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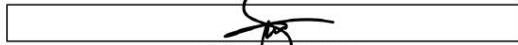
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DATE	June 23, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Testing and Quality Assurance	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team's agenda for this week is to deploy the system to the host company server and conduct a user acceptance testing to the identified users of the developed system. The deployment will commence tomorrow which will be facilitated by the team 3 which leads the phase 3 for the development phase. The team continued refining the system features and applied some modifications to make the system ready for the deployment and user testing. The team delivered a wide range of improvements across dashboards, modals, access control, and UI consistency, pushing the platform closer to full polish. Major enhancements were made to the Envi Waste Dashboard, including updates to the ZoomModal component such as embedding chart titles in downloaded images, adding default selections for "From Year" and "To Year", enlarging the refresh button, removing unnecessary borders, and formatting units to lowercase for consistency. In the Economic Dashboard, the team adjusted KPI card colors, added currency symbols, optimized pie chart sizing, and enhanced bar chart logic to use company IDs instead of names. The HR section saw fixes to color palettes, incident chart behavior, and modal functionality, while file upload error handling was improved for better UX across modules. The team also integrated a group-by filtering feature in dashboards, fixed related issues, and ensured proper user access in the Energy Repository. Meanwhile, updates to the landing and login pages included layout improvements, cleaned-up dummy content, refined navbar structure, and added parameters in the button component for easier styling.



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DATE	June 24, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Testing and Quality Assurance	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team 3 reported onsite to facilitate the system deployment to the host company server, which will be used for the user acceptance testing of the identified users of the developed system. While the team is processing the deployment, the team continued refining the system features. The team rolled out extensive updates aimed at strengthening role-based access, refining the user interface, and improving responsiveness across dashboards and modal components. Significant backend logic refactoring took place, especially in the ProtectedRoute and EconomicRepository components, ensuring that authentication and role-based routing now handle redirects and access permissions more robustly. The Envi and HELP repositories also received access control logic tailored to specific user roles, while redundant routes in App.jsx were removed to simplify navigation. The dashboard layouts were optimized to fit within a single view without requiring zoom-out, and color schemes were made coherent—particularly in the Economic and HELP sections. The user profile page was introduced with image upload support and sidebar enhancements. Visual polish included transparent dashboard headers, elevated shadows, icon button improvements, and updated KPI card colors and growth logic in the Econ dashboard. The team also added PDF export functionality, CO2 avoided widgets, and responsive layouts tailored for mobile screens. Error handling was improved through a variety of new modals for incorrect input, duplicate entries, edit confirmations, and save failures. Finally, SmartLanding now dynamically adjusts its navigation based on role, ensuring a smooth user experience from login through to dashboard interaction.



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DATE	June 25, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Testing and Quality Assurance	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team successfully deployed the system yesterday and the team 2 reported onsite to conduct the user acceptance testing for the environment team. Before the scheduled testing, the team encountered some challenges with the deployed system. The hosted api is not yet fetched in the hosted front-end that's why the login functionality doesn't work when the team tested the deployed system. Luckily, we were able to fix the issue by re-assigning the api route to the host server route to direct the requests. While waiting for the testing, the team further refined the system features to enhance user experience. The team concentrated on polishing the main dashboard's design and usability, particularly for deployment readiness and clarity in data interactions. On the deployment side, critical configuration updates were pushed to ensure that both api.js and vite.config.js are now accessible and correctly set up for the deployed environment, facilitating smoother operation and debugging in production. After conducting the user testing, the team documented the user feedback while for the system documentation. Also, we have applied some minor fixes based on the user feedback. The key functionality fixes was made to the Envi modals, where the updated status is now visibly included, addressing feedback from Envi testers to reduce confusion when reviewing or updating records.



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DATE	June 26, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	Testing and Quality Assurance	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team 1 reported onsite to continue with the user testing with other departments, they planned to conduct the testing from the economics, social, and power plant team in the host company. The team updates the deployed system by pulling the recent updates from the web and api github repository. The team further applied minor fixes from the previous user testing to make enhance the user experience. The development team rolled out several enhancements focused on user interface behavior, accessibility, and usability improvements. A scrollable confirmation modal was implemented for bulk approvals, improving the user experience for large-scale status changes. On the navigation side, HR overview routing was updated, and the sidebar received major functionality upgrades—it is now toggable, and can dynamically expand or collapse dropdowns for specific sections like "Envi" and "Social," offering a more intuitive and organized navigation flow. Additional functional refinements were made in the Envi module: the Approve button is now hidden while in Edit mode to prevent accidental actions, and the Export button is always visible, ensuring users can export records at any point regardless of their current view or state. These updates further enhance clarity and efficiency in user interactions across modules. Unfortunately, the team 1 wasn't able to conduct the user testing due to the host company's tight schedule for this week. The team will look forward next week for the remaining user testing.



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DATE	June 27, 2025	AREA/ASSIGNMENT	System Development and Implementation
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team 2 started working on the system documentation, specifically the user manual while the user testing for other teams are on-going to maximize the team workflow. We included the major features in currently developed system such as the repository and dashboard. User manual for the other features of the system will be included once the system is finally completed. On the other hand, further feature enhancements are done by other teams. The updates focused on profile management and backend session handling. The Profile page received a minor visual or structural adjustment to refine its presentation. In parallel, significant backend improvements were pushed to enhance session tracking, including the integration of functions that monitor user activity and communicate updates to the backend. The CO<sub>2</sub> context was optimized to use API calls instead of raw fetch requests, promoting consistency and maintainability. Additionally, console logging was cleaned up for better readability, and the user activity check interval was adjusted from 10 seconds (used during testing) to a more production-suitable 5-minute interval, ensuring efficient and responsive session management.



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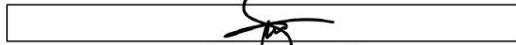
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DATE	June 30, 2025	AREA/ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The Team 2 documented the feedback from the User Acceptance Testing (UAT) conducted with the Environment team last week for the system documentation. The feedback primarily focused on improving the user interface and overall user experience. Some key enhancements identified for immediate implementation included capitalizing field names in record modals, improving status update prompts to display the current status, conditionally hiding the Approve button when a record is marked "For Revision," and revising the UAT test cases to be clearer and easier to follow. These four items were approved for implementation within the limited remaining timeline of the sprint. Other suggestions include replacing the term "HEAD" with "HQ," making the sidebar clickable, enhancing sidebar content visibility, modifying token expiration behavior, removing redundant text in dashboards, and adding a notification feature, which were acknowledged but tagged for future development cycles due to scope and time constraints. All team were made aware of the scope limitations and verbally agreed to the prioritized changes. The team has outlined next steps to implement, test, and document the approved enhancements accordingly.



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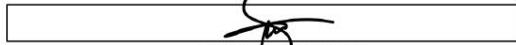
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DATE	July 1, 2025	AREA ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team further enhanced the system based on the user feedback in the user acceptance testing. Although some teams are not yet finished with the testing, other teams have few more user testing to conduct which was supposedly scheduled last week, but due to user availability and time constraint, the team decided to reschedule them this week to cover all the user testing within this week. The team will focus primarily with the system documentation afterwards to finish the overall training period in the company. The team delivered several user experience and security enhancements. Based on user feedback, tooltips were added to the sidebar, improving navigability and accessibility, especially for first-time users. General frontend fixes were also implemented to streamline the interface and resolve minor issues. The login page behavior was improved to prevent full-page refreshes upon incorrect password entry, offering a smoother user experience. Finally, a new layer of security was introduced with the addition of obfuscate encryption, helping protect sensitive data and enhance the system's overall integrity.



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DATE	July 3, 2025	AREA/ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team further enhanced the system based on the user feedback in the user acceptance testing. We rolled out a series of usability improvements and UI fixes across key modules. A “Clear Filters” button was introduced in the Economic Repository, along with sortable columns to enhance data navigation and filtering. Sidebar usability was also refined—the burger icon was removed, enabling users to expand or collapse the sidebar by clicking anywhere that isn't a button, and route fixes were applied to streamline navigation. In the economic repository, input validation was enforced to accept numeric values only, user prompts were added for record overwrites, and the dashboard UI/UX received key enhancements. The CSR page underwent bug fixes, and to support better session management, and a Logout Confirmation Modal was added.



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DATE	July 4, 2025	AREA/ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team further enhanced the system based on the user feedback in the user acceptance testing. We introduced several enhancements focused on improving user experience and system functionality. A dedicated Admin Landing Page was added to streamline administrative access. The social section in the Overview Dashboard received layout adjustments, and the Investments KPI component was optimized for better screen utilization. The Sidebar tooltips were enhanced to dynamically reflect item labels, improving navigation clarity. The logout functionality was also refactored within the AuthContext to ensure it properly communicates with the backend and gracefully handles errors. Additionally, the Audit Trail component was improved with better sorting and filtering logic, and success dialogs were implemented for file imports within the Economic modals, providing clearer feedback to users.

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TRAINEE'S SIGNATURE

## DAILY JOURNAL

### IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC.
- SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.
- HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

DATE	July 7, 2025	AREA/ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team further enhanced the system based on the user feedback in the user acceptance testing. The team focused on refining the system's branding, consistency, and usability. The website icon and page title were updated in index.html to reflect ESGDash branding, along with the addition of a new SVG icon. In ViewEditEnviModal.jsx, all field labels were capitalized to ensure uniform presentation. Dashboard interfaces were made more consistent across the board, and the Export time was added to the Zoom Modal for clarity. A fix was also implemented for a logo image error. On the data visualization side, the waste type display was corrected—fallback values ('--') were added for missing data, and chart titles for hazardous and non-hazardous waste distribution were clarified for better interpretability. On the other hand, we are preparing for the upcoming final presentation to the executives to present all the enhancements that we worked on based on the UAT feedbacks. We will present by tomorrow, the team are preparing the power presentation deck as well as the deployed system for a smooth flow of presentation.



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DATE	July 8, 2025	AREA ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team presented the final output of the team to the executives, they were able to give feedback regarding the current developed system. Some minor fixes are raised during the presentation, which will be done in the future development of the system. The feedback includes future developments for the system which includes integrating AI as part of the application where it will use company data to assist users efficiently. The executives were delighted with the result of the web application, we were able to address the major needs of the company in the short period of time and with limited data on-hand.

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REVISION NO.: 00  
REVISION DATE: May 10, 2016

## DAILY JOURNAL

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DATE	July 9, 2025	AREA/ASSIGNMENT	Documentation and Training
TASK	System Documentation	SHIFT/TIME	7:00 AM - 4:00 PM / WFH

The team already finalized the documentation such as the user manual and the included deliverables in the project charter. This will be essential for the project wrap up and official turnover of all the project documentation to the host company. We will also finalize the narrative report in preparation for the final portfolio and presentation.

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TRAINEE'S SIGNATURE

COPY: (1) STUDENT; (2) PRACTICUM ADVISER

**FORM OVPAA 030G**

THIS FORM IS AVAILABLE AT THE OVPAA.

**Appendix G**  
**Complete Daily Time Record (April – July)**

MAPÚA MALAYAN COLLEGES LAGUNA					
DAILY TIME RECORD*					
NAME OF STUDENT		KANE JUSTINE A. COMETA		NAME OF HOST COMPANY/ DEPARTMENT ASSIGNED TO	
MONTH		APRIL		PETROENERGY	
DATE		TIME-IN	TIME-OUT	TOTAL HOURS	INITIALS
DATE		TIME-IN	TIME-OUT	TOTAL HOURS	INITIALS
MONTH		MAY		MGR/SUPERVISOR	
1		1		1	
2		2		8:00 AM      5:00 PM      8 HRS      JLPO	
3		3		4	
4		4		5	
5		5		7:00 AM      4:00 PM      8 HRS      JLPO	
6		6		6	
7		7		7:00 AM      4:00 PM      8 HRS      JLPO	
8		8		8	
9		9		7:00 AM      4:00 PM      8 HRS      JLPO	
10		10		9	
11		11		10	
12		12		11	
13		13		7:00 AM      4:00 PM      8 HRS      JLPO	
14		14		7:00 AM      5:00 PM      8 HRS      JLPO	
15		15		7:00 AM      10:00 PM      15 HRS      JLPO	
16		16		7:00 AM      4:00 PM      8 HRS      JLPO	
17		17		17	
18		18		18	
19		19		7:00 AM      4:00 PM      8 HRS      JLPO	
20		20		20	
21		21		7:00 AM      4:00 PM      8 HRS      JLPO	
22		22		22	
23		23		7:00 AM      4:00 PM      8 HRS      JLPO	
24		24		24	
25		25		25	
26		26		7:00 AM      4:00 PM      8 HRS      JLPO	
27		27		7:00 AM      4:00 PM      11 HRS      JLPO	
28		28		8:00 AM      5:00 PM      8 HRS      JLPO	
29		29		8:00 AM      5:00 PM      8 HRS      JLPO	
30		30		8:00 AM      5:00 PM      8 HRS      JLPO	
31		31		8:00 AM      4:00 PM      8 HRS      JLPO	

REVISION NO.: 00  
 REVISION DATE: May 10, 2016



## DAILY TIME RECORD\*

REVISION NO.: 00  
REVISION DATE: Mar 19, 2016

NAME OF STUDENT		KANE JUSTINE A. COMETA		NAME OF HOST COMPANY / DEPARTMENT ASSIGNED TO		PETROENERGY			
MONTH		JUNE		MONTH		JULY			
DATE	TIME-IN	TIME-OUT	TOTAL HOURS	MGRIS/PVSR INITIALS	DATE	TIME-IN	TIME-OUT	TOTAL HOURS	MGRIS/PVSR INITIALS
1					1	7:00 AM	4:00 PM	8 HRS	JLPO
2	7:00 AM	4:00 PM	8 HRS	JLPO	2				JLPO
3	7:00 AM	4:00 PM	8 HRS	JLPO	3	7:00 AM	4:00 PM	8 HRS	JLPO
4	7:00 AM	4:00 PM	8 HRS	JLPO	4	7:00 AM	4:00 PM	8 HRS	JLPO
5	7:00 AM	4:00 PM	8 HRS	JLPO	5				
6					6				
7					7	7:00 AM	4:00 PM	8 HRS	JLPO
8					8	7:00 AM	4:00 PM	8 HRS	JLPO
9	7:00 AM	4:00 PM	8 HRS	JLPO	9	7:00 AM	4:00 PM	8 HRS	JLPO
10	7:00 AM	4:00 PM	8 HRS	JLPO	10				
11	7:00 AM	4:00 PM	8 HRS	JLPO	11				
12					12				
13	7:00 AM	4:00 PM	8 HRS	JLPO	13				
14					14				
15					15				
16	7:00 AM	4:00 PM	8 HRS	JLPO	16				
17	7:00 AM	4:00 PM	8 HRS	JLPO	17				
18	7:00 AM	4:00 PM	8 HRS	JLPO	18				
19	7:00 AM	4:00 PM	8 HRS	JLPO	19				
20	7:00 AM	4:00 PM	8 HRS	JLPO	20				
21					21				
22					22				
23	7:00 AM	4:00 PM	8 HRS	JLPO	23				
24	7:00 AM	4:00 PM	8 HRS	JLPO	24				
25	7:00 AM	4:00 PM	8 HRS	JLPO	25				
26	7:00 AM	4:00 PM	8 HRS	JLPO	26				
27	7:00 AM	4:00 PM	8 HRS	JLPO	27				
28					28				
29					29				
30	7:00 AM	4:00 PM	8 HRS	JLPO	30				
31					31				

VERIFIED BY

Signature over printed name of Practicum Supervisor \_\_\_\_\_ Date \_\_\_\_\_

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\* To be validated once a week by the Practicum Adviser/Coordinator  
\*\* This may be replaced by the DTR officially used by the company

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