

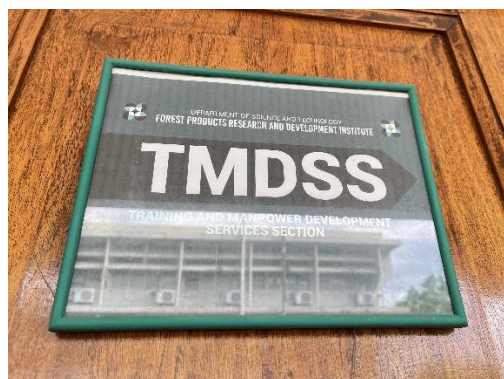
## Overview of the Practicum

### Company Background

DOST – FPRDI (Forest Products Research Development Institute) is a government research agency under the Department of Science and Technology (DOST) of the Philippines. Its main goal is to advance the utilization and sustainable development of the country's forest-based resources, DOST-FPRDI conducts scientific research, technological development, and capacity-building initiatives in the field of forest products and related industries.



Its headquarters is in Los Baños, Laguna. Inside the University of the Philippines, located in the forestry department. The institute focuses on enhancing the competitiveness of the forest products sector through innovation in wood processing, bamboo utilization, furniture production, bio-based materials, and forest product engineering. It also provides testing, technical assistance, training, and technology transfer services to various stakeholders, including local industries, government agencies, and communities.



I was assigned in the Training and Manpower Development Services Section (TMDSS) in the Technical Services Division (TSD). Our section facilitates the trainings done by the organization. TMDSS oversees assisting the experts and scientists whenever trainings are conducted in-house or on different parts of the Philippines.

## **Nature of Assignments**

Since our section oversees the trainings done by DOST-FPRDI across the country. They wanted to be able to visualize the trainings that they have finished and be able to go through these data based on when and where it was conducted. This enables them to showcase their finished trainings on semi-annual reports and when conducting trainings across other stakeholders and organizations.

Another thing they proposed is to automate the certification process on their conducted seminars and webinars. Currently, after exporting the spreadsheet data of respondents from the google forms, they manually check if attendees were able to answer the forms for background information, attendance, and evaluation. Attendees are only eligible to receive a certificate if they have answered these google forms. This tedious process is all done manually and takes a lot of time by checking all three-spreadsheet data and encoding the names of eligible participants. To work on these tasks, we started first on taking down of features to be included in the programs and noting down of program flow and functions.

## **Hours Rendered**

Starting from April 22, 2025, up to July 15, 2025, my current total rendered hours is 396 hours.

## **Practicum Deliverables**

### **DOST – FPRDI Training Activities**



*Figure 1.0 Landing Page*

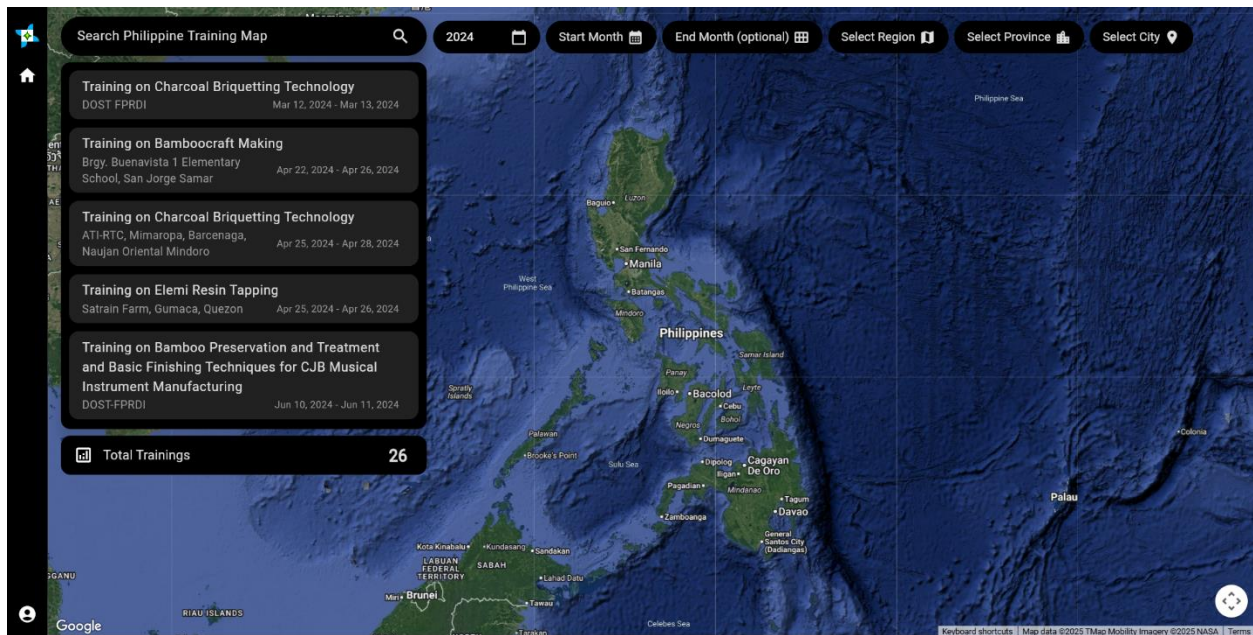


The landing page contains the name of the system and upon clicking the “View Map” button, the user will be directed to the main page of the program.



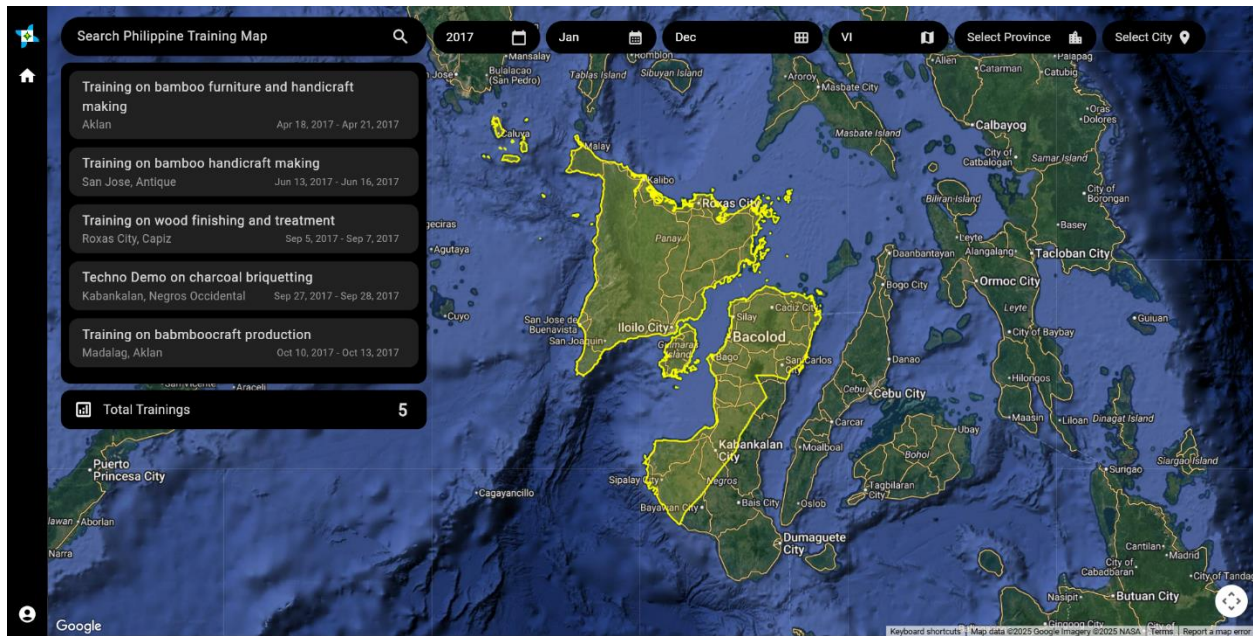
**Figure 1.1 Map Page**

The map page displays the map of the Philippines. On this page users can sort through the trainings based on year month, and range of month. They can also sort through the regions, provinces and cities that the trainings have been conducted.



**Figure 1.2 Map Page (Sorting by year)**





**Figure 1.3 Map Page (Sorting by month range and Region)**



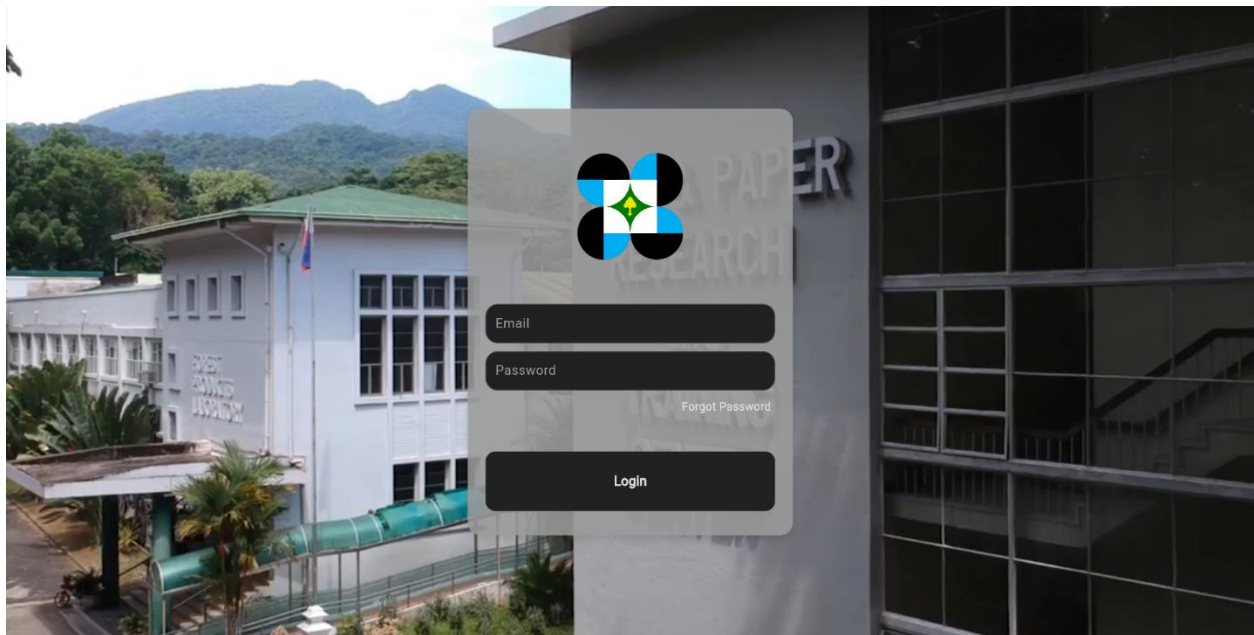
**Figure 1.4 Map Page (Sorting by month range and province)**

Figures 1.12 to 1.14 shows the sorting by year, month, and location. It shows the different trainings that were conducted on specific month ranges on specific locations. Using the filters allows the user to see the trainings that were conducted through the result box and its minor details.



**Figure 1.5 Map Page (Training Details)**

Users can select specific trainings and be able to view detailed information regarding their selected training.



**Figure 2.0 Login Page**

Authorized users can login on the system and be able to access admin related features.





**Figure 2.0 Map Page (File management navigation accessible)**

After being authenticated, authenticated users can now access the admin page.



**Figure 3.0 Admin Page**

Upon navigating to the admin page they can view, add, edit, and delete the yearly training records. They can also opt to add individual records or import entire yearly data.



Edit Data

City

Biñan

Province

Laguna

Region Number

IV-A

Training Type

coordinated activities

Start Date (YYYY-MM-DD)

2023-09-14

End Date (YYYY-MM-DD)

2023-09-15

Continuation Date (YYYY-MM-DD)

Update

**Figure 3.3 Admin Page (Edit Training)**

Upon clicking the “Edit” button, the user can edit specific information on their selected existing training.

DOST-FPRDI Tracker

localhost:51450

File Management

training\_info\_2023

Add Record

Import

Training Records

Plywood Testing	2023 Sep 14	Edit	Delete
Charcoal Briquetting Technology	2023 Jul 19	Edit	Delete
Resin Lamination	2023 Oct 19	Edit	Delete
Charcoal Briquetting Technology	2023 Oct 26	Edit	Delete
Engineered Bamboo Production	2023 Aug 10	Edit	Delete
Skeletoni zed Leaves Production	2023 Nov 09	Edit	Delete

Confirm Deletion

Are you sure you want to delete the activity titled:

Plywood Testing?

Cancel

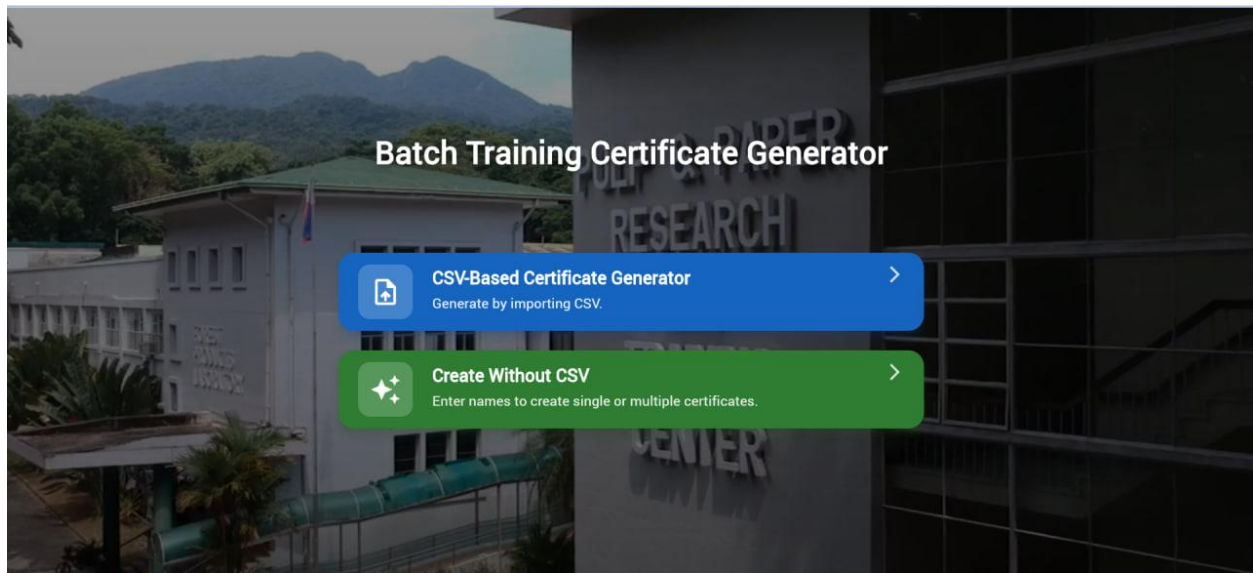
Delete

**Figure 3.4 Admin Page (Delete)**

Authorized users can also delete specific training activities. Upon clicking the “Delete” button, they will be prompted to confirm if they want to delete the specific training.

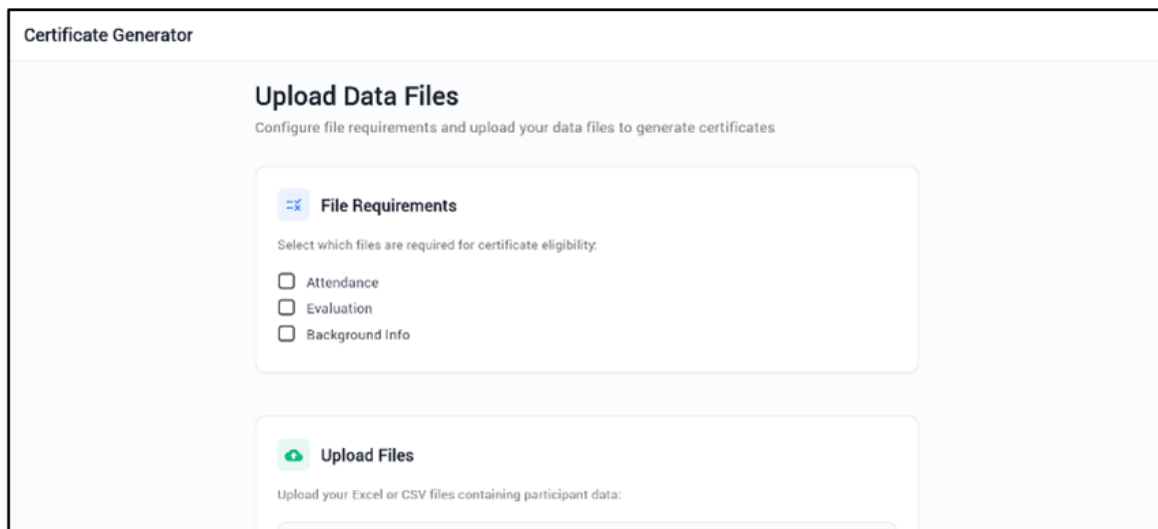


## Certificate Generator



***Figure 4.0 Landing Page***

Upon opening the program, users are welcomed into the landing page. It shows the name of the program: csv-based certificate generator. It also displays two options: the CSV-Based Certificate Generator and the Create Without CSV.

The image displays the 'Certificate Generator' interface. At the top, the title 'Certificate Generator' is shown. Below it, the section 'Upload Data Files' is highlighted, with the instruction 'Configure file requirements and upload your data files to generate certificates'. The interface is divided into two main sections: 'File Requirements' and 'Upload Files'. The 'File Requirements' section includes a sub-header 'File Requirements' and a prompt 'Select which files are required for certificate eligibility:'. It contains three checkboxes: 'Attendance', 'Evaluation', and 'Background Info'. The 'Upload Files' section has a sub-header 'Upload Files' and a prompt 'Upload your Excel or CSV files containing participant data:'. There is a file upload area with a plus icon and a text input field.

***Figure 4.1 CSV-Based Certificate Generator***

When users click on the “CSV-Based Certificate Generator Button”, users can select which requirements should the participants be validated in. The forms for the seminar are the attendance, evaluation, and background info. Below, users can upload the files procured from the google forms from the seminar.

**Certificate Generator**

Upload your Excel or CSV files containing participant data:

- Attendance** Required  
 May 15 2025 (Attendance) - Engineered Bamboo Production (Level 2) (Responses) - Form Responses 1.csv • 75 entries Replace
- Evaluation** Required  
 (Evaluation) May 15, 2025 - Engineered Bamboo Production (Level 2) (Responses) - Form Responses 1.csv • 49 entries Replace
- Background Info** Required  
 May 15, 2025 (backgroundinformation) - Engineered Bamboo Production Level 2 (Responses) - Form Responses 1 (1).csv • 176 entries Replace

[Continue to Generate Certificates](#)

**Figure 4.2 CSV-Based Certificate Generator (Files Uploaded)**

After uploading the necessary files, the program displays the information on the uploaded files including the file name and the number of entries. Users can also replace their uploaded file if necessary. After finalizing this process users can continue to the next step.

**Participant Eligibility Report**

**Summary**

Total Participants	Eligible	Ineligible	Eligibility Rate
74	45	29	60.8%

**Eligible Participants** 45

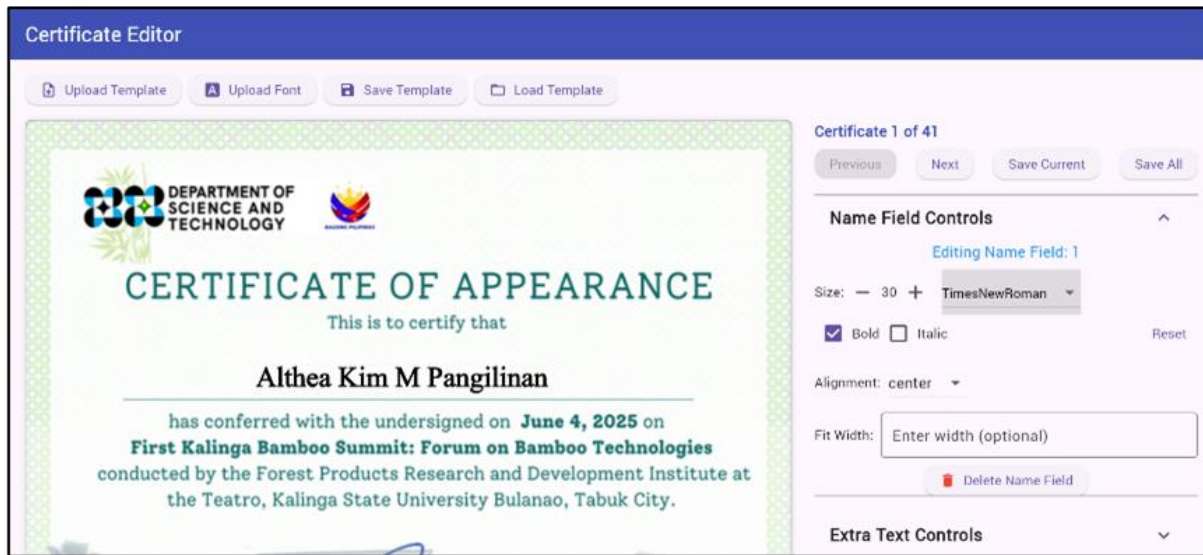
**Ineligible Participants** 29

**Actions**

[Export Eligible](#)
[Export Ineligible](#)
[Generate Certificates](#)

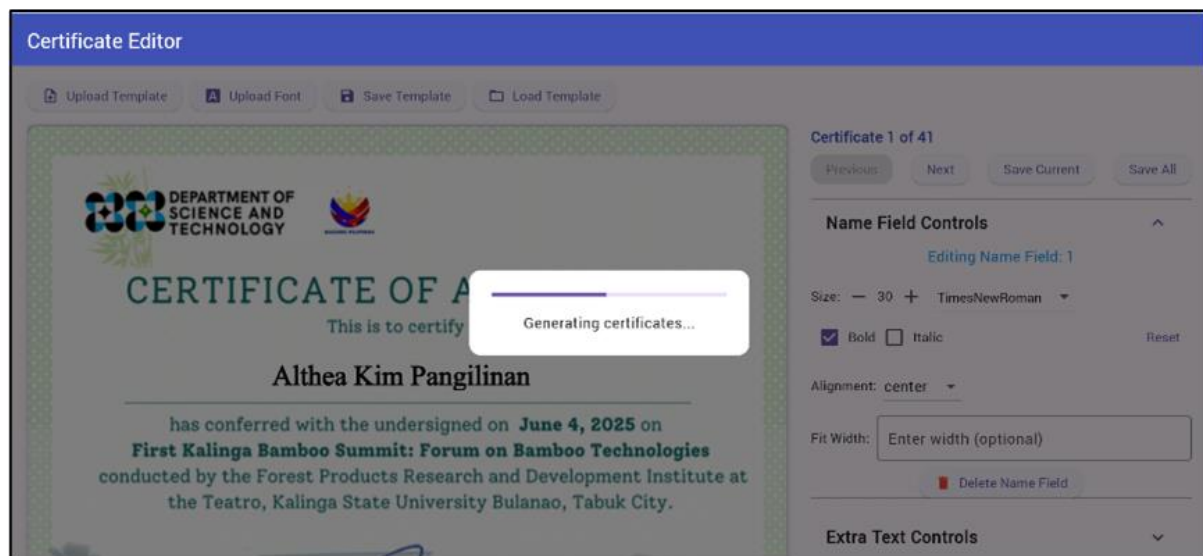
**Figure 5.0 Participant Eligibility Report**

Upon proceeding, users can view the summary of the participants based on the uploaded files. Here they can see the number of total, eligible, and ineligible participants. It also shows the rate of eligible participants based on all the participants. Below users can also see individually the names of eligible and ineligible participants and may opt to export that information.



**Figure 6.0 Certificate Editor**

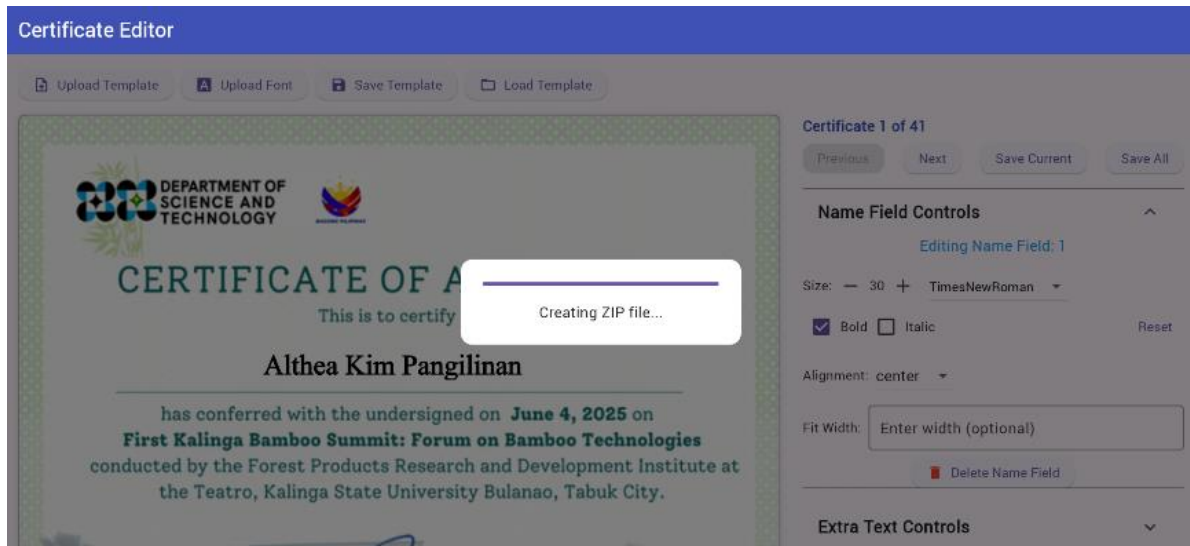
After clicking the “Generate Certificates” button, users are now directed to the certificate editor page. At the top, users can upload the templates of the certificates and upload fonts they want to use. Users can also save templates and load templates that exists on their devices. On the right side, users can navigate through each participant. Below that, they can select the font styles of the display of names.



**Figure 6.1 Certificate Editor (Generating Certificates)**

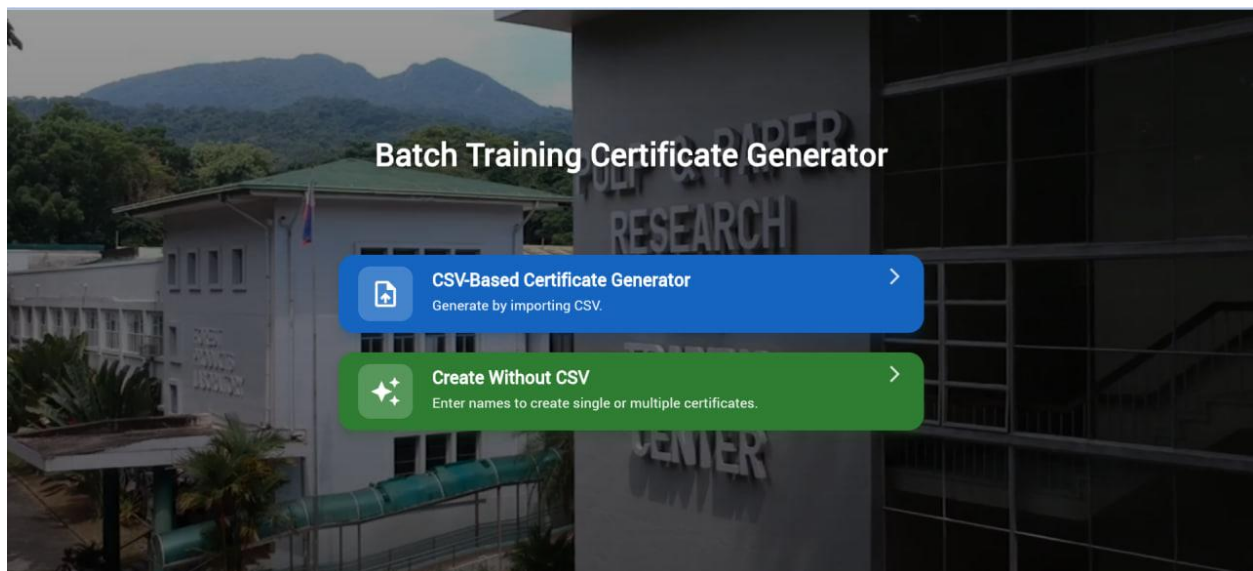
Upon clicking the save current or save all option, the users will see the loading prompt of the certificate/s being generated.





***Figure 6.2 Certificate Editor (Generating Certificates Save all)***

If users opted to save all there is also a display showing creating zip file since when opting for save all pdf of the certificates are saved and compressed into a zip file.



***Figure 7.0 Landing Page***

Users may also opt for the second option which is the Create Without CSV. This option is used when individual and minute amounts of certificates are needed to be generated.

#### Recipient Names

Enter one name per line. Numbers will be automatically removed.

John Doe  
Jane Smith  
Michael Johnson

#### Certificate Template

Upload a PNG, JPG, or JPEG template for your certificates.

Choose Template File

**Figure 8.0 Create Without CSV (Name Inputs)**

Upon clicking the “Create Without CSV Button”, users can input names of participants who will have their certificates generated.

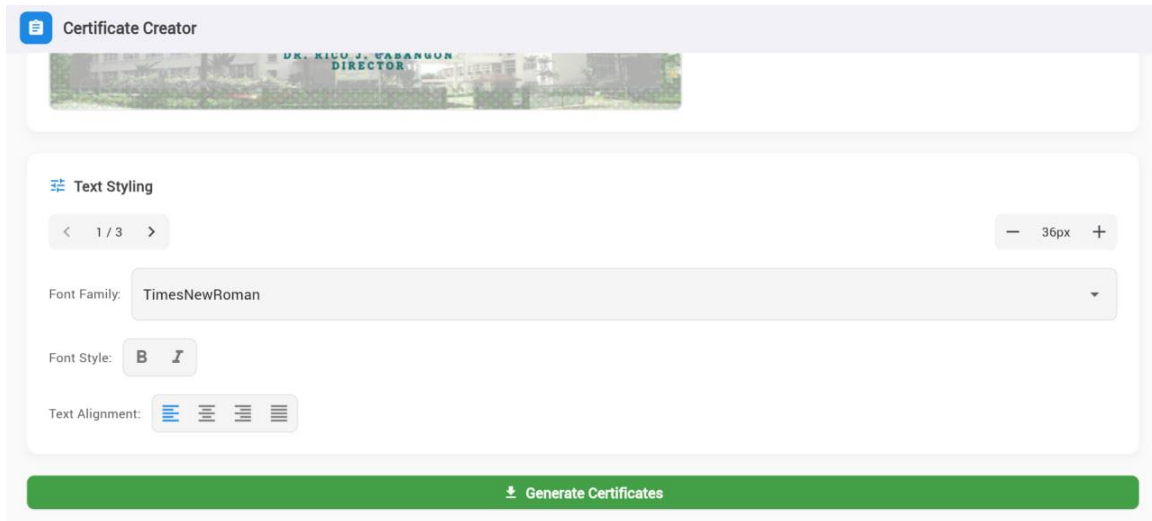
Currently editing:  
John Doe

1 of 3



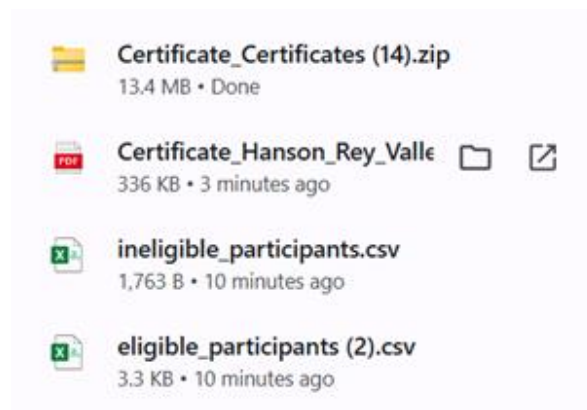
**Figure 8.1 Create Without CSV (Certificate Template Formatting)**

After uploading a certificate template below, users can edit the placements of the names on the template and browse through the names of the inputted participants.



**Figure 8.2 Create Without CSV (Information Formatting)**

They can also edit the font styles and formatting of the information right below.



**Figure 10.0 Create Without CSV**

After finalizing the information users can download the certificates by clicking the “Generate Certificates” button.

### **Discussion on Tasks and Assignments,**

During our practicum at DOST-FPRDI TSD-TMDSS, our tasks focused on addressing the specific needs of the division through system development. We began by identifying their requirements and discussing possible solutions. From there, we carefully planned the system features and established the flow of both the training activities mapping system and the certificate generator. We populated the database with relevant data, ensuring that the structure supported the intended functionalities. As we developed each feature, we consistently sought feedback from the division, allowing us to refine the system based on their input. This process of continuous consultation and adjustment guided us in completing a system that aligned with their workflow and addressed their operational needs.



## **Synthesis of the Practicum Engagement**

### **Learnings**

This practicum has taught me lessons in the technical aspect as long as lessons that I can apply in my life. First, the development of the DOST-FPRDI training activities mapping taught me on how to incorporate Google Maps API in the development of the system. It taught me other integrations such as the use of GeoJson files in the map features.

Additionally, the systems database introduced me on the usage of Supabase as a database for the system. Even with a few hiccups, I learned how to integrate authentication with the use of Supabase. I also relearned how to work with relational databases again with the storage of our system's data. We used Supabase to store the data for each year's trainings and its related information.

In the certificate generator, I learned how to connect with data from csv files and be able to import them to be used in the system. I learned how to interconnect multiple spreadsheet files in order to determine eligible participants to be given their certificates. Another general thing I learned is how to save multiple files and be able to compress and download them through a zipped file.

In summary, I learned how to analyze and understand organizational workflows and how to translate them into effective system designs. Working on the training mapping system strengthened my skills in database management, user interface design, and data visualization, while the certificate generator project deepened my understanding of data validation and process automation. Lastly, it became clear that a system's success depends not just on its technical quality but on how well it meets the practical needs of its users.

### **Realization**

Through this experience, I realized how powerful simple digital solutions can be in solving real-world problems. What may seem like a minor improvement, a visual dashboard or an automated process, can have a significant impact on an organization's efficiency and workload. I saw firsthand that software development is not only about coding but about understanding human workflows and making systems that genuinely help people in their work.

Aside from the technical skills I gained, I also learned the value of building good relationships with workmates and supervisors. I realized how important it is to establish a healthy connection in the workplace, not necessarily to remove the pressures of work entirely, but to create a more open and supportive environment. This experience helped me understand how to maintain professionalism while still being able to bond with colleagues. I appreciated seeing how my workmates could shift naturally between moments of focused collaboration and lighthearted interaction. It showed me that balancing professionalism with healthy workplace camaraderie contributes to a more productive and positive work atmosphere.

## **Conclusion**

My OJT at DOST-FPRDI TSD-TMDSS showed me how even simple digital solutions can make real work more efficient and impactful. By contributing to the training activities mapping system and certificate generator, I saw firsthand how technology addresses actual needs, not just through code, but through thoughtful design shaped by real workflows.

At the same time, I learned that professionalism goes hand in hand with building healthy relationships. Working with people who could balance serious tasks with light moments taught me that trust and collaboration are just as important as technical skills in any workplace.

This experience strengthened my desire to build solutions that not only work but make a difference, and to grow as a developer who values both the systems I create and the people I work with.

## Appendices



## MARK JEFFERSON ELIZAGA

4th Year BSIT Undergraduate

### CONTACT

📞 09209780344

✉️ mjelizaga13@gmail.com

📍 Ph2 Blk 24 Lt.12, Verona Subd.  
Brgy Hoyo, Silang Cavite

### EDUCATION

#### COLLEGE

MAPUA MALAYAN COLLEGES LAGUNA

President's Lister	Dean's Lister
2023-2024	2021-2024

#### HIGH SCHOOL

CARITAS DON BOSCO SCHOOL

Academic Achiever	Class President	SSL Chairman
2015 - 2021	2018-2021	2019-2021

### SKILLS

#### Mobile Development

- (Flutter, MAUI, XML)

#### Web Development

- (HTML CSS)

#### Back End Programming

- (PHP, MySQL, Firebase)

#### Other Languages

- C#, C++, Python, JavaScript

### CAREER OBJECTIVE

I am a 4th Year BSIT undergraduate student aspiring to learn industry best practices while also contributing my technical and management skills to the industry.

### ACADEMIC PROJECTS

#### TRAINING ACTIVITIES MAPPING (WEB)

*DOST-FPRDI Training Activities Mapping*

- Led the development of web designs UI using **Flutter**
- Implemented state management using **BlocProvider**
- Implemented database connectivity using **Supabase**
- Achieved our goal of providing a mapping for trainings conducted by DOST-FPRDI across the Philippines

#### FLOOD MANAGEMENT SYSTEM (WEB, MOBILE)

*GIS - based Flood Management System Using Remote Sensing*

- Led the development of mobile and web UI using **Flutter**
- Implemented state management using **BlocProvider**
- Implemented database connectivity using **Firebase**
- Achieved our goal of providing a management system for impending floods to residents and the barangay

### CERTIFICATIONS

- COMPTIA IT Fundamentals (July 2024)
- AWS Cloud Foundations (Nov 2023)
- Google Cloud Essentials (Aug 2023)
- CCNA: Introduction to networks (Nov 2022)



3 April 2025

DR. RICO J. CABANGON

DIRECTOR of DOST-FPRDI

Narra Rd., Forestry Campus, University of the Philippines Los Baños Campus, College, Laguna, 4031

Dear Dr. Cabangon,

The B.S. in Information Technology program of Mapúa Malayan Colleges Laguna requires their students to undergo Practicum program for a minimum of 486 hours in an academic calendar that will prepare our students to be job-ready after completing their curriculum. This program intends to enable our students to acquire and practice the knowledge and skills expected of a graduate of a B.S. IT program which, in turn, would guarantee continuous supply of IT professionals needed by your company.

We believe that your company can provide the relevant exposure necessary for our students to achieve the intended learning outcomes for the B.S. in Information Technology program. In this regard, I would like to endorse Mr. Jefferson M. Elizaga to have his practicum activities in your company as requested.

We thank you for your confidence and trust with us and we look forward to a more meaningful linkage that is mutually beneficial to our students and your company.

With warm regards,



ADOMAR L. ILAO, DIT

BSIT Program Chair

College of Computer and Information Science

Mapúa Malayan Colleges Laguna

[alilao@mcl.edu.ph](mailto:alilao@mcl.edu.ph)

(049) 832-4076

### 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	Mark Jefferson M. Elizaga	STUDENT NUMBER	2021150416
COURSE CODE	IT199F	SY/TERM ENROLLED	2024-2025/ 3 <sup>RD</sup> TERM

This is to certify that Mark Jefferson M. Elizaga has been accepted for practicum at DOST Forest Products and Research Development Institute, Narra Rd., Forestry Campus, UPLB Campus College, Laguna and will be attached to the Training and Manpower Development Services Section, Technical Services Division department/s for a minimum of, but not limited to 486 hours. Training will commence on April 22, 2025 and is expected to end on July 30, 2025. Attached is the list of requirements.

#### COMPANY REPRESENTATIVE

<u>Celene Joice A. Mijon</u>	<u>Admin. Asst. II</u>
Signature over Printed Name	Official Designation
<u>HRMS - FAD</u>	<u>celene.joice.almijon@fpdri.dost.gov.ph</u>
Department	Email and Contact Number/s

#### NOTED BY

<u>Alvin Dices</u>	<u>5/10/2025</u>
Signature over printed name of Practicum Coordinator	Date

## 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, Mark Jefferson M. Elizaga, a student of MAPUA MALAYAN COLLEGES LAGUNA (hereinafter referred to as "MCL", do hereby voluntarily undergo on-the-job training at DOST Forest Products Research and Development Institute, hereinafter referred to as the "Host Company", located at Narra Rd., Forestry campus, UPLB Campus, College, Laguna, under the following terms and conditions:

- That the practicum training will commence on April 22, 2025 and ends on July 30, 2025 and will have to complete a minimum of 486 hours required for the on-the-job training;
- 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;
- 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;
- 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.;
- 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;
- 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;
- 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;
- 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;
- 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 23 day of May


  
Mark Jefferson M. Elizaga  
Signature over printed name of Student Trainee

### WITH OUR CONSENT:

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

### NOTED BY:

  
Adomar Ilao  
Printed Name and Signature of Practicum Adviser/ Coordinator

  
EMILY JANE L. LANKENTE  
Printed Name and Signature of Host Company Representative

### TRAINING PLAN

NAME	Mark Jefferson M. Elizaga	COURSE CODE	IT199F
PROGRAM & STUDENT NO.	BSIT- 2021150416	COURSE TITLE	I.T. PRACTICUM

#### STUDENT OUTCOMES

CO1. Analyze organizational needs and design appropriate digital solutions  
CO2. Apply technical knowledge in software development and database systems to real-world projects  
CO3. Demonstrate growth through hands-on industry experience and continuous learning

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

A. Company Orientation	–	8 hrs
B. Software Development	–	438 hrs
C. Technical Documentation	–	40 hrs

#### EVALUATION GUIDELINES & COURSE OUTCOMES

##### DEMONSTRATION OF SOFT SKILLS (40%)

###### KEY AREAS

###### COMMUNICATION SKILLS (20%)

Relate to co-trainees/supervisors terminologies and rules Recite procedures and instructions needed for the tasks Identify and describe safety signs and symbols  
Ask critical questions related to the tasks  
Produce well-written regular and incident reports  
Prepares and presents reports using Information and Communication Technology (ICT)

###### PROFESSIONAL DEPORTMENT (20%)

Observes proper grooming and attire  
Reports to work regularly on time and as necessary, even beyond prescribed working hours  
Acts according to the job description given by the company  
Willing to accept new tasks apart from the usual routine and responsibilities  
Delivery quality output on time  
Demonstrates respect for different individuals

###### INITIATIVE (+5%)

Volunteers to perform tasks beyond routine tasks

##### DEMONSTRATION OF TECHNICAL SKILLS (60%)

###### KEY AREAS

###### SOFTWARE DEVELOPMENT SKILLS



- Able to deliver bug-free modules on time (20%)
  - Delivered stable modules with no major bugs reported. (10%)
  - Met all project deadlines consistently. (10%)
- Able to integrate and implement the new modules (10%)
  - Successfully integrated Supabase. (5%)
  - Implemented key features with smooth functionality. (5%)
- Able to implement good UI/UX principles in the modules (10%)
  - Applied consistent design and responsive layout. (5%)
  - Ensured user-friendly navigation and interaction. (5%)

###### TECHNICAL DOCUMENTATION SKILLS (20%)

- Created and maintained clear project timelines. (5%)
- Able to write Testing Activities documents (5%)
- Documented test cases and tracked bug resolutions. (5%)
- Prepared easy-to-follow guides for end users. (5%)

###### INITIATIVE (+5%)

Volunteers to perform tasks beyond routine tasks

CONFORME	CONSENT (FOR MINORS ONLY)	NOTED BY	ENDORSED BY	APPROVED BY
 <b>Mark Jefferson M. Elizaga</b> SIGNATURE OVER PRINTED NAME OF STUDENT / DATE	SIGNATURE OVER PRINTED NAME OF PARENT OR GUARDIAN / DATE	 <b>Mr. Ademar L. Ito</b> SIGNATURE OVER PRINTED NAME OF PRACTICUM SUPERVISOR / DATE	<b>Mr. Ademar L. Ito</b> SIGNATURE OVER PRINTED NAME OF PRACTICUM ADVISER / DATE	<b>Mr. Ademar L. Ito</b> SIGNATURE OVER PRINTED NAME OF PROGRAM CHAIR / DATE





REVISION NO.: 02  
REVISION DATE: Nov. 8, 2019

## PRACTICUM INTENT FORM

### IMPORTANT INFORMATION

- THIS FORM IS FILLED-UP BY THE STUDENT TO SIGNIFY INTENTION TO ENROLL IN THE PRACTICUM COURSE
- TO BE SUBMITTED TO THE PROGRAM CHAIR ONE TERM BEFORE THE PRACTICUM
- STUDENTS WHO PREFER TO TRAIN WITH A COMPANY THAT IS NOT IN THE APPROVED LIST MUST COMPLY TO APPLICABLE POLICIES AND DUE PROCEDURES.

### PERSONAL INFORMATION

NAME OF STUDENT	Elizaga, Mark Jefferson M.	STUDENT NUMBER	2021150416
PROGRAM AND YEAR	BSIT- 4th Year	CONTACT NO. AND E-MAIL ADDRESS	09209780344   mjelizaga13@gmail.com

### PRACTICUM INFORMATION

PRACTICUM COURSE CODE	IT199F
COURSES TO BE TAKEN WITH PRACTICUM	IS181 & IT200-D
TOTAL UNITS (PER COURSE)	157
TOTAL NO. OF UNITS TAKEN	142

### PREFERRED / TARGET HOST COMPANIES

<input checked="" type="checkbox"/> ST Microelectronics
<input checked="" type="checkbox"/> Bigan City Hall
DOST

- ☒ I have a preferred Host Company.
- ☐ I am requesting for a Host Company and my preferred location is \_\_\_\_\_

I hereby undertake to provide all relevant information as required by Malayan Colleges Laguna (MCL) and/or the Host Training Establishment (HTE). Hence, by signing this document I hereby give my consent for MCL and/or the HTE to generate, extract, use, store, and dispose any and all personal data that may be necessary. Furthermore, I am authorizing MCL and/or the HTE to obtain copies of my medical and psychological assessment reports as part of the practicum requirements.

Elizaga, Mark Jefferson M.

SIGNATURE OVER PRINTED NAME OF STUDENT/DATE

SIGNATURE OVER PRINTED NAME OF PROGRAM CHAIR/DATE

DO NOT WRITE BELOW THIS LINE

### CENTER FOR HEALTH SERVICES AND WELLNESS - ENDORSEMENT

- ☐ Endorsed for Practicum
- ☐ Endorsed for Practicum with Monitoring

SIGNATURE OVER PRINTED NAME OF CHSW PERSONNEL/DATE

### CENTER FOR GUIDANCE AND COUNSELING - ENDORSEMENT

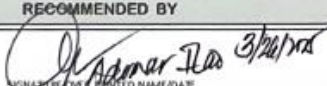
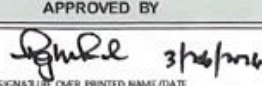
- ☒ Endorsed for Practicum
- ☐ Endorsed for Practicum with Intervention

SIGNATURE OVER PRINTED NAME OF CGC PERSONNEL/DATE

### APPROVAL

REMARKS/CONDITIONS:

Approved for Practicum

RECOMMENDED BY	APPROVED BY
 PROGRAM CHAIR	 DEAN

COPY: (1) STUDENT; (2) PROGRAM CHAIR

OVPAA-016-01

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DATE	April 22 - 25	AREA ASSIGNMENT	TSD-TMDSS
TASK	Overview of the company and introduction of tasks	SHIFT/TIME	7am - 4pm

On our first week at DOST, we met our supervisor and got oriented with the rules and how things work in the organization. We were introduced to the department we'll be working with and learned about the tasks they handle. Ma'am Margie and Sir Jeriel explained the project we'll be doing, what they expect from us, and how the system we'll build will be useful for them. On Thursday, we helped out during their Tech Seminar since our department was in charge of the event. It was a good experience seeing how they organized it and how they presented their work to others. We also received the files and datasets that we'll use in building the database for the project. One challenge I faced was understanding some parts of the dataset since a few fields were unfamiliar. I talked with my co-interns and asked questions during the debrief, which helped me understand things better. I realized how important it is to ask early and clarify when something's not clear. Overall, it was a good start. I learned a lot about how projects are planned in government offices. For improvement, I think it would help if interns were shown examples of past systems or given quick guides to better understand the flow and expectations.

  
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DATE	April 28 - May 2	AREA ASSIGNMENT	TSD-TMDSS
TASK	Database Population and Started the building block of the system	SHIFT/TIME	7am - 4pm

For this week, we focused mainly on preparing the data and starting the development of the system's interface. We spent most of our time populating the database with records from the years 2014 to 2022. The data was organized and uploaded to ensure that the system would have enough information to work with once we begin implementing data-driven features. It was a bit repetitive, but it gave us a better understanding of the structure and content of the dataset we're working with. We also were able to reflect on the fields and tables that our database will need, adjusting it accordingly. After that, we moved on to designing the landing page and login interface of the system. We set up the basic routing so that users can navigate from the landing page to the login page smoothly. We also worked on the UI layout, including choosing a background image and organizing the elements to make it visually clear and functional.

One accomplishment this week was successfully connecting our frontend to the database. This was an important step, as it allowed us to start testing data retrieval and user login features early on. There were minor issues while integrating the database, especially in linking fields correctly, but we managed to solve them through testing and debugging.

This week gave me more hands-on experience with setting up actual system pages and seeing how frontend and backend elements come together. A challenge was figuring out how to organize the data efficiently so it would be easier to retrieve later on, but communication and breaking the tasks into smaller steps helped a lot.

So far, the workflow has been smooth. One recommendation I have is to perhaps include sql data retrieval using dummy user accounts early on, so we can test features more easily without waiting for the full data set to be uploaded.

  
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DATE	May 5 - 9	AREA ASSIGNMENT	TSD-TMDSS
TASK	UI Development, Sorting Functions, and Login Integration	SHIFT/TIME	7am - 4pm

This week focused on building the core user interface and improving the system's functionality, especially in terms of navigation and data filtering. I started working on the base design for the map overlay, placing the Philippine map as the foundation for future geographic features. Alongside the UI development, we also began creating SQL functions and a basic UI test to confirm they were working as expected.

One of the main features developed was the sorting function, which allows data to be filtered by year, month, region, and province. Later in the week, I added a sorting feature for month range, as requested by our supervisor. I also worked on debugging some issues in the filter page, particularly where certain areas weren't sorting properly, and managed to resolve the errors.

The login page was finalized early in the week, both in terms of UI and functionality. I implemented login authentication using email and password, allowing users to securely access the system. In addition, I started developing the navigation rail, which includes the DOST logo, navigation buttons, and a login option. I also developed the dropdowns UI that will be used. Lastly, I worked on fixing the routing between pages to make sure the flow of the system followed the correct sequence.

Overall, this week was productive and involved a lot of trial and error, especially with debugging and testing features. It was satisfying to see key parts of the system start to come together visually and functionally.

  
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DATE	May 12 -16	AREA ASSIGNMENT	TSD-TMDSS
TASK	Results Display and Filter Integration	SHIFT/TIME	7am - 4pm

For this week, I focused on designing and setting up how filtered data would be displayed in the system. I created the result box, which serves as the main section where the filtered outputs appear. Inside the result box, I also developed the result tile — a reusable container that displays each individual training's information in a clean and organized way.

After setting up the layout, I integrated the filtering functions into the dropdowns and connected them to the result display. Now, when a user selects filters like year, region, or date range, the system updates the result box and shows the appropriate result tiles based on the selected criteria.

This week helped me better understand how UI components interact with backend data. It was rewarding to see the filters and display come together to form a more complete and interactive part of the system.

  
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DATE	May 19 - 23	AREA ASSIGNMENT	TSD-TMDSS
TASK	UI Refinement and Initial Map Feature Exploration	SHIFT/TIME	7am - 4pm

This week, I focused on improving the results tile and refining the user interface for a smoother user experience. I resolved several UI issues, including incorrect data display caused by improperly formatted inputs in the database. After reviewing and correcting these inconsistencies, the result tiles now display accurate information.

Additionally, I updated the UI logic so that the result box only appears once dropdown filters are selected, instead of always showing a "No results found" message by default. This helped make the interface cleaner and more intuitive. I also fixed a minor issue where "No results found" would flash briefly before displaying the actual results.

Toward the end of the week, I began working on the map features. Upon realizing that the current map setup had limitations, we proposed using the Google Maps API to our supervisor, which would require access to a billing account. While exploring alternatives like GeoJSON and manually building a custom map, I encountered several errors and challenges that I continue to troubleshoot.

Despite the setbacks, the week was productive in improving both the interface and preparing for more advanced features like map integration.

  
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DATE	May 26 - 30	AREA ASSIGNMENT	TSD-TMDSS
TASK	Admin Page Integration and Map Feature Implementation Attempts	SHIFT/TIME	7am - 4pm

This week, I focused on integrating the admin and CRUD pages into our main system and actively worked on implementing map features. The admin panel and its corresponding CRUD functionalities were successfully incorporated into the main program. These pages allow admin users to view, add, and manage training-related data, laying the foundation for proper administrative control within the system.

In parallel, I spent considerable time attempting to implement different mapping solutions. I explored various options including OpenStreetMap, Nominatim, Mapbox, and Google Maps API, while also experimenting with GeoJSON data integration for displaying local boundaries. However, each option came with its own limitations—some lacked necessary map labels, others didn't match the visual aesthetic of the app, and several core features were restricted behind paywalls or required a billing account, which we are still waiting to get approved.

Despite multiple attempts, the available map APIs did not perform as expected or align with our intended design and functionality. These challenges delayed our progress on the map component, but they also helped us identify the technical and visual constraints of each platform early on.

Overall, the admin integration was a success, and while the map feature remains unresolved, the week provided valuable insights that will help in choosing and setting up the right solution once the necessary resources are approved.

  
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DATE	June 2 - 6	AREA ASSIGNMENT	TSD-TMDSS
TASK	Authentication Refactor and BLoC State Management	SHIFT/TIME	7am - 4pm

This week, I focused on refactoring the authentication system to adopt a more scalable and maintainable structure using the BLoC state management pattern. The goal was to move away from the simple auth gate we initially used and implement a proper flow that could support role-based access and cleaner logic separation.

I created and organized multiple files for this refactor: `admin_user.dart` to define the user model, `auth_repo.dart` to declare the auth functions, `firebase_auth_repo.dart` to implement them using Firebase, `auth_states.dart` to manage various login states, and `auth_cubit.dart` to control logic flow and emit state changes. The idea was to centralize authentication logic and improve how the system responds to login events and user roles, especially for admin functions.

Despite completing most of the setup, I encountered integration issues that caused unexpected behavior in the navigation and page access. After multiple attempts to troubleshoot and debug the structure, I temporarily reverted to the original simple auth gate to maintain system stability while planning to revisit the refactor with a fresh approach later.

This week gave me a deeper understanding of how BLoC works and highlighted the importance of gradual integration when refactoring core systems.

  
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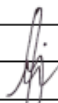
DATE	June 9 - 13	AREA ASSIGNMENT	TSD-TMDSS
TASK	Google Maps API Integration and GeoJSON Setup	SHIFT/TIME	7am - 4pm

This week, we finally received approval for the Google Maps API billing account, thanks to the support of our supervisor. With access to the API key, we began learning and working with the Google Maps API to enhance our system's map functionality.

During implementation, we discovered that the zooming feature we wanted still required proper GeoJSON files to define map boundaries. I used geojson.io to inspect our existing data and found it lacking a separate JSON file for regions. After searching online, I was able to find a suitable file and added it to our project assets.

We started testing the zooming functionality using the GeoJSON file. Initially, the map could only zoom into the whole Philippines. We tried changing the logic to use the center of the selected GeoJSON feature instead of a hardcoded initialCenter LatLng, but the zooming still didn't behave as expected. Despite our efforts, the map didn't fully cooperate, which was frustrating.

Even though we didn't reach the full outcome we hoped for this week, we made solid progress in integrating the correct data sources and preparing the system for proper map behavior.

  
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DATE	June 16 - 20	AREA ASSIGNMENT	TSD-TMDSS
TASK	Successful Map Zoom Features and Boundary Implementation	SHIFT/TIME	7am - 4pm

This week, I focused on fully integrating the map zooming functionality using the finalized and corrected GeoJSON files. With the proper files in place, I was able to test specific locations from our database to check if they would correctly display on the map based on the GeoJSON data. After a few adjustments, the tests were successful, and I quickly moved forward with implementation.

I began by working on the region-level zoom, adding parsing logic to resolve value mismatches between the database entries and the GeoJSON properties. Once this was stable, I applied the same method to the province-level filtering and zooming, ensuring that selected provinces from the dropdown would correctly center on the map. I repeated the process for city-level selections, carefully matching the database and GeoJSON values to avoid inconsistencies.

After confirming that all zooming functions were working properly for regions, provinces, and cities, I proceeded to implement the boundary outlines for each level. With the database and GeoJSON files now fully aligned, drawing accurate boundaries became much more manageable.

This week marked significant progress in making the map features fully functional and reliable within the system.

  
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DATE	June 23 - 27	AREA ASSIGNMENT	TSD-TMDSS
TASK	Authentication Refactor with Supabase and State Management	SHIFT/TIME	7am - 4pm

This week, I focused on improving the authentication system by refactoring it with proper state management using Supabase and Cubit. I aimed to address persistent issues, especially those related to navigating away from the map page while maintaining active authentication states.

I restructured the supabase\_auth\_repo to centralize all Supabase authentication functions and set up the auth\_cubit to handle state transitions. However, I encountered multiple errors during testing, mostly involving navigation and state handling conflicts.

One breakthrough came when I realized that by temporarily removing my generic error-catching logic, I could directly see the specific errors thrown by the system. This helped me identify the actual causes of the problems more clearly and plan better fixes moving forward.

Although the refactor isn't fully polished yet, I made progress in understanding the deeper connections between authentication states and navigation flow, which will be valuable for further development.

  
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DATE	June 30 - July 4	AREA ASSIGNMENT	TSD-TMDSS
TASK	Authentication Bug Fixes, Navigation Handling, and UI Alignment	SHIFT/TIME	7am - 4pm

This week, I continued working on resolving the authentication and navigation issues that have been affecting the system. I managed to fix the login flow, ensuring that authenticated users are now redirected to the correct pages. Previously, the system would authenticate the user but remain stuck on the login page, which I was able to troubleshoot and correct.

While fixing this, I also tackled a persistent issue on the map page where navigation away from it caused unexpected crashes. This problem was challenging due to three separate causes—one related to microtasks, another involving inherited providers, and a third linked to map tiles not finishing their load. These errors were especially tough to debug since they didn't consistently appear in the console, making tracing them more difficult.

Aside from backend fixes, I took time to refine the UI elements for the admin features, making sure they aligned with the overall theme of the system. As a small win amidst the draining debugging process, improving the CRUD UI helped me regain some momentum and sense of progress.

Despite the challenges, this week strengthened my problem-solving skills, especially in handling complex state and navigation issues under pressure.

  
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DATE	July 7 - 11	AREA ASSIGNMENT	TSD-TMDSS
TASK	Map Error Handling, Navigation Fixes, and Marker Implementation Attempts	SHIFT/TIME	7am - 4pm

This week was focused on resolving the remaining critical issues with the map features and navigation. After thorough testing, I discovered the cause of the persistent "onTilesLoading" error. It occurs when the map still has white (unloaded) tiles and the user attempts to navigate away. As a temporary fix, I disabled navigation clicks while tiles are still loading and added a cooldown period before navigation becomes available again.

I also experimented with changing the navigation method from indexed navigation to using `Navigator.push()`. This approach helped partially address the issue of being unable to navigate away from the map page, though some related bugs still need further refinement.

On top of that, I started working on adding markers for specific venues on the map. However, I encountered unexpected problems with the Flutter geocoding package, even the example code from its official documentation didn't work as intended. Despite these setbacks, these trials helped me better understand the complexity of integrating dynamic map features and how critical error handling is in mapping applications.

This week may have been full of trial and error, but it brought valuable insights into handling Flutter map behaviors under real project conditions.

  
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