FEU INSTITUTE OF TECHNOLOGY

COLLEGE OF COMPUTER STUDIES AND MULTIMEDIA ARTS

PROJECT PROPOSAL

Submitted by:

Caayon, Shem James

Delas Armas, Paulo

Miranda, Joby Mae

Pineda, Angelo Kacey

Submitted to:

Mr. Alex Hernandez

Date:

April 26, 2025

1. Project Title

- IllumiNation PH:

  Tagline:

- Powering Communities. Illuminating the Nation, one pin at a time.

  Short Description:

- IllumiNation PH is an interactive platform dedicated to mapping unelectrified communities across the Philippines. We connect donors, volunteers, and organizations to areas in need, providing solutions like solar technology and infrastructure support to bring sustainable light and energy to every Filipino household.

2. Executive Summary

Illumination PH is a web application that is designed to address the issue that is faced by Filipinos which is energy poverty in the philippines. It serves as the central online platform that helps with connecting with communities that have no access to electricity with individuals, organizations and resources that can facilitate and support the efforts in making electricity more available to these places.

Its primary purpose is to increase awareness of the issue and streamline the process of connecting aid providers with communities that are in need of the help, and empower individuals and organizations to take concrete action towards sustainable solutions for making electricity available. By providing accessible information, facilitating direct communication to individuals, and offering resources, specifically information, the project aims to accelerate the goal of making electricity a universal access in the philippines.

The target group will be individuals that are interested in helping for the cause. This can include volunteers, donors, technical experts, students that are willing to help and even advocates that are looking for ways to contribute to the electrification of these places. Another target will be community leaders of barangay captains in the affected areas. The platform can provide them a channel to communicate their needs and connect with potential sources of assistance.

There are expected outcomes that are resulted from the project and website that the researchers prepared and will implement. One of these is increased awareness, since the website will display information that promotes greater public understanding of the extent of the impact of energy poverty in the philippines. Another expected result is improved connectivity, there will be more direct and efficient connections between communities that has no electricity to individuals or organizations that are providing support. Increased volunteer engagement, donors, and implementation of sustainable energy projects in the areas, since there will now be a medium to connect and collaborate to different individuals, more convenient access to specific information, and organization that aims to help for the cause.

3. Background and Problem Statement

In the philippines there is significant amount of people that lacks access to electricity which hinders their overall development and well being of the residents that reside there.As of 2022, the electrification rate in the Philippines was 96.2%, indicating that about 3.8% of households did not have access to electricity.According to a 2019 report, there were around 2,319,660 households without access to electricity.More recent data from 2024 suggests that nearly 30% of Filipinos do not have access to electricity or experience brownouts.This issue often is underreported and unnoticed by the mainstream media and there is a great need for awareness and coordinated action to address the absence of electricity.

The researcher's proposed solution is making a website that facilitates the places or locations where different places or regions with the absence of electricity are shown. Furthermore, the website helps aspiring individuals that want to help and actively volunteer themselves for this cause of helping them. The website will guide the person for energizing these communities by showing information regarding the place/community that has no electricity such as contact number of Brgy leader, Number of houses/families that are affected and more. Other than showing basic information about the place, the website will guide the individual on how to actively help them, this can be done by showing organizations that the individual might want to join with the objective of helping them or the website can show some step by step solutions or actions on movements or things to do to actively contribute the energizing of these communities.

In short, a platform that acts as a central hub for connecting communities that have no access to electricity with individuals, organizations and potential solutions. Currently, the challenge of the absence of energy in these places in the Philippines lacks a centralized and action-oriented platform. While the issue may be acknowledged anecdotally, there isn't an easily accessible and comprehensive resource that effectively bridges the gap between the communities in need and those who are willing and able to help. The website can provide the visibility to the and quantification to the unseen using visual mapping. It can provide connections to the facilitators of that said place or communities with people like the Brgy leader and other officials that are necessary. Additionally, it can also provide connections to organizations that help for the same cause or individuals that also want to help for the same cause or objective.

This website empowers actions to individuals through information and resources. It goes beyond just identifying the problem by providing actionable methods. Whether its connection, exploration of feasibly off grid solutions or advocating for policy changes, the platform will equip individuals with the knowledge and resources to contribute meaningfully for the cause. In addition to that, by making the issue more visible and providing a place for involvement, it fosters a collective responsibility among individuals and a wider community to address this issues and promote equitable development.

In Summary, IllumiNation PH is not just any other website; it's a vital tool to illuminate the issue of energy poverty, connect those who can make a difference, and empower concrete action that goes towards a brighter and more electricity-available future for Filipinos. It

addresses the current lack of a dedicated platform that combines information, connection, and actionable resources to tackle this critical development challenge.

4. Project Objectives

The objective of the website is to develop a user-friendly web-application that effectively connects unelectrified communities that are in the Philippines with individuals, organization, and resources in order to facilitate and accelerate the implementation of electrification of those places along with efforts into doing it.

5. Scope of the Project

Web Application Module	**Module Features**	**List of Pages**
Interactive Map Module	Philippine map pinning locations without access to electricity. Clicking on the pins in specific areas also shows the organizations that cover this area for volunteer work.	Home Interactive Map
Account Creation Module	Login/Sign up for users when creating an account or Logging in.	Login/Sign-up
Donation Module	List of trusted and recommended organizations that support electrification of rural areas, these redirect users to the donation sites of other organizations.	Donation Partners
Update and Report Module	Users may update the state of electricity access in some regions and areas.	Submit Report/Update Impact Stories
Admin Dashboard Module	Dashboard exclusively for admins to manage reports and updates, including donations.	Admin Dashboard (admins only)
Educational Resources and Contact	A page wherein the user can see the statistics and information about the electricity access in certain areas. This part also contains the contact information of	About IllumiNation PH Contact Us

	IllumiNation PH.	

Web Application Module	**Module Features**	**List of Pages**
Donation Information Module	In-platform donation system to donate through the web application directly.	Donation Partners
Data Management Module	Real-time updates regarding the status of electrification and projects.	Interactive Map

6. Target Users / Audience

Users	**User Persona**	**Web Application Module (Assigned)**
Donor	Name: Alex Reyes Age: 25 Occupation: Fast Food Restaurant Manager Motivation: Wants to help unelectrified communities through small donations. Prefers quick and secure payment methods. Frustrations: Complicated donation processes, unclear project transparency.	- Account Creation Module - Donation Module
Volunteer	Name: Jessica Domingo Age: 20 Occupation: College Student Motivation: Wants to volunteer skills (e.g., installation of solar panels,	- Account Creation Module - Volunteer Opportunities (linked to Map)

	community education). Frustrations: Not knowing where to sign up or what help is needed.	
LGU Employee	Name: Engr. Carlo Mendoza Age: 35 Occupation: LGU Officer for Public Works Motivation: Wants to coordinate infrastructure projects and update electrification status. Frustrations: Lack of centralized data on electrification needs.	- Account Creation Module - Update and Report Module
NGO Volunteer	Name: Mara Villanueva Age: 28 Occupation: NGO Field Worker Motivation: Help communities with logistical support like solar kits or education materials. Frustrations: Difficulty finding which areas need the most urgent help.	- Account Creation Module - Interactive Map Module - Impact Stories Section

7. System Features and Functional Requirements

Functional Requirements	**Description**	**User Story**	**Evidence (List of Pages)**
User Login	Users will create an account to manage reports about updates on electrification in certain areas.	The user wishes to donate to an organization that will create projects with the mission to develop sustainable	Login Page

	Furthermore, these accounts will be included in the database in case of donations.	electricity sources in off-grid areas. They are required to create an account, as this will correlate to their donation	
Interactive Map	Displays areas without electricity in the form of a map, using pins and location bubbles to illustrate the regions with no access to electricity.	Users are given a visual representation of areas in the Philippines without access to electricity. The user can learn more about how to address this and about the organizations that aim to create projects with the purpose to spread electrification.	Home/Interactive Map
Donation Redirect	Allows users to donate through organizations that aim to provide sources of electricity to rural areas by providing a redirect button that serves as the donation of the user.	Users wish to donate for a cause of spreading electricity access to rural areas, in order to achieve this, they navigated to the Donation Partners page to donate to specific organizations that aim to build projects to address this issue.	Donation Partners Page
Educational Resources	A page for statistics and information about the state of electricity access in certain areas of the country, backed up by research and evidence.	The users wish to know more about the cause of IllumiNation PH and the status of electrification in certain areas of the country. Going to the About IllumiNation PH page, the user is presented with statistics and information about the status of off-grid and rural areas in terms of access to electricity.	About IllumiNation PH

Region Filter	A feature wherein the user can filter by a specific region, province, City, and	The user wants to help a specific region in the country because some of their family members live in that specific region. To make it easier to identify the areas with no electricity access and eventually donate to organizations that are in range of those areas, the user turns on the region filter to make this process simpler and easier.	Interactive Map
Report Submissions	Users may write reports or updates about the electrification projects or about the state of electricity access in their area	The user would like to update on their area which is currently receiving help through a solar panel project. This can be done through submitting a report about the current status of their area when it comes to electrification.	Submit Report/Update
Admin Dashboard	A feature in which an admin can validate and verify the updates in terms of credibility.	An admin wants to verify a report given by a user in a specific area, this update will only be reflected in the interactive map after an admin verifies this report.	Admin Dashboard
Impact Stories Page	The Impact Stories Page will display short articles, images, and reports shared by NGO volunteers or community coordinators. This aims to build transparency and	A NGO Volunteer or Community Coordinator wants to post success stories and updates so that donors and volunteers can see the real impact of their contributions.	Impact Stories Page (Under Submit Report/Updates or connected via Home)

	inspire donors and volunteers.		

8. Technology Stack

Stack	Use Description	Web Application Module
• Frontend (e.g., React, Vue)	HTML5, CSS3, JavaScript (Vanilla or React.js) — for building responsive and interactive user interfaces (e.g., login forms, map display, dynamic filters).	Login page, Interactive map, Donation page.
• Backend (e.g., Node.js, Django)	Node.js with Express.js — to handle server-side operations like user authentication, data submission, and report generation.	Account management, Admin dashboard.
• Database (e.g., MySQL, MongoDB)	MongoDB Atlas — to store user accounts, submitted reports, donation information, unelectrified community data.	User and Report Database.
• Tools (e.g., Git, Docker, CI/CD platforms)	Git (version control), GitHub (repository hosting), Mapbox API (for interactive maps), Trello (task/project management), Docker (optional, for containerization later if needed).	Full project Cycle

9. System Architecture and Design

- **Frontend:** Built with HTML5, CSS3, and JavaScript (vanilla or light frameworks).

- **Database:** Firebase Realtime Database, which stores dynamic content like barangay information, NGO lists, and donation/volunteer links.

- **Data Fetching:**

  - The frontend makes **direct API calls** to Firebase to retrieve or display data.
  - There is **no separate backend server** (like Node.js) processing requests.

- **User Interaction:**

  - Users click on map pins or action buttons.
  - JavaScript fetches community data from Firebase and displays it on the page dynamically.
  - Buttons such as "Donate" or "Volunteer" redirect users to external websites (e.g., donation links, Google Forms).

Diagram of Architecture:

[User (Browser)]

↓

[Frontend (HTML, CSS, JavaScript)]

↓

[Firebase Realtime Database (Cloud)]

- **Data Flow:**
  - **Browser sends HTTP GET request → Firebase Database → Data returned → Displayed on Web Pages.**

10. Development Timeline / Project Milestones

Activity	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Data Gathering													
Requir													

ements Analysis													
System & UI Design													
Dev Sprint 1: Interactive Map Module													
Dev Sprint 2: Auth & Donation Module													
Dev Sprint 3: Reporting & Admin Dash													
Testing & QA													
Deployment & Documentation													

- **Planning**

- Duration: 3 weeks (Weeks 1–3)
- Deadline: End of Week 3
- Milestone: Requirements Specification signed off (data sources catalogued, user stories finalized)

- **Design**

- Duration: 2 weeks (Weeks 4–5)
- Deadline: End of Week 5
- Milestone: System architecture diagram and UI wireframes completed

- **Development**

- Duration: 5 weeks (Weeks 6–10)
- Deadline: End of Week 10

Milestones:

  - Sprint 1 (Weeks 6–7): Interactive Map module (pinning + filters)
  - Sprint 2 (Weeks 8–9): Authentication & Donation flow
  - Sprint 3 (Week 10): Report submission form & Admin dashboard

Testing & QA

- Duration: 2 weeks (Weeks 11–12)
- Deadline: End of Week 12
- Milestone: Test report delivered (all critical bugs fixed, cross-device usability confirmed)

Deployment & Wrap-up

- Duration: 1 week (Week 13)
- Deadline: End of Week 13
- Milestone: Production deployment live + complete user and developer documentation handed over

11. Team Roles and Responsibilities

Role	Responsibilities	Name
Project Manager	Oversee the entire project, ensuring all phases are completed on time. Coordinate between developers, designers, and other stakeholders. Ensure resources (financial, human, etc.) are allocated effectively. Track project milestones and deliverables, providing regular updates to stakeholders. Manage budget, timeline, and risk factors. Handle any issues or obstacles that arise, making sure the project remains on track.	Angelo Kacey Pineda
Developer	Build and maintain the interactive map (front-end and back-end). Implement search and filter functionality for users to find locations easily.	Paulo Delas Armas

	Integrate map APIs (like Google Maps, Mapbox, or Leaflet) into the platform. Develop the donation and contact systems on the site. Ensure the website is mobile-friendly and optimized for various devices. Debug, test, and optimize the site for performance and usability.	
Quality Analyst	Test the website's functionality, user interface, and user experience (UI/UX). Identify and report bugs, glitches, and inconsistencies in the system. Ensure that all features (map interaction, donation flow, contact pages) work smoothly. Conduct usability testing to make sure the website is intuitive for users. Validate that all content (e.g., community descriptions, donation links) displays correctly across devices. Collaborate with the developer to resolve any issues and improve the platform's performance.	Shem James D. Caayon

Data Lead and Community Coordinator	Gather and write information about unelectrified communities (problem descriptions, needs, contacts). Manage and update content for each map pin (photos, videos, descriptions). Communicate with local leaders, NGOs, and potential donors for up-to-date information. Help craft social media posts, announcements, and updates. Ensure all public content is clear, sensitive, and respectful to the communities featured. Assist in building partnerships with schools, youth groups, and volunteer organizations.	Joby Mae M. Miranda

12. Budget and Resources (Optional)

Item	**Unit**	**Quantity**	**Sub-total (PHP)**
Hosting & Domain	Annual	1	P 500
Map API	Annual	1	P 500
Web Development Tools	-	-	-
Design & UI Tools	-	-	-
Marketing/Promotion	-	-	-
Contingency	-	-	P 2,000
Total:			P 3,000

13. Risk Management

Assumption	Risk	Mitigation (Activity)
The website will attract a steady flow of traffic	Low User Engagement	Use targeted social media campaigns and school/NGO partnerships to increase visibility.
Development team will be able to meet deadlines	Delays in development:	Regular check-ins with the team, setting micro-deadlines, and prioritizing critical tasks.
Volunteers/donors will trust the platform	Lack of trust from donors/volunteers	Display real-time progress of donations and projects. Publicly show results and impact.
Donation system will work smoothly	Payment gateway failure	Set up a backup payment method (e.g., GCash/Maya), and provide a transparent error resolution process.
Accurate data for unelectrified areas will be collected	Inaccurate location information:	Regularly update location data and verify through local community leaders.
The website will remain online and secure	Website downtime	Invest in quality hosting and implement security protocols (SSL, backups, etc.).

14. Evaluation and Success Criteria

Success Metric	Description
User Engagement	Track users, repeat visitors, and interaction with the map.
Donations Received	Measure total funds raised per location, donation frequency, and average amount.
Volunteer Sign-ups	Track the number of volunteers registering for various tasks (on the platform).
Community Feedback	Collect feedback from local communities and stakeholders to

	measure satisfaction.
Website Uptime	Ensure website uptime is at least 99.9% to provide consistent access to users.
Project Completion Rate	Percentage of communities that have received support (either through donations or on-the-ground assistance).
Completion of Map Entries	Track the number of communities added to the map and the accuracy of the data. Completing x number of communities in the project timeline.

15. Appendices / Supporting Documents

- Wireframes, mockups, flowcharts, references.