Asset Management System

Project Report

Prepared for: NEEPCO (North Eastern Electric Power Corporation Limited)

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# 1. Executive Summary

The Asset Management System is a comprehensive solution developed for NEEPCO to efficiently track, manage, and maintain their physical and digital assets. Built on Laravel 10, the system provides a robust platform for asset lifecycle management with advanced tracking and reporting capabilities.

# 2. System Overview

## 2.1 Core Features

â€¢ Asset lifecycle management with unique identifiers

â€¢ Role-based access control

â€¢ Maintenance scheduling and tracking

â€¢ Document management

â€¢ Real-time reporting and analytics

â€¢ Barcode/QR code support

â€¢ Automated notifications

## 2.2 Technical Stack

â€¢ Backend: Laravel 10, PHP 8.1+

â€¢ Frontend: HTML5, CSS3, JavaScript, Vue.js

â€¢ Database: MySQL/PostgreSQL

â€¢ Documentation: PlantUML, Markdown

â€¢ Testing: PHPUnit, Pest

# 3. System Architecture

## 3.1 Database Schema

The system utilizes a relational database with the following key tables:

|  |  |
| --- | --- |
| Table Name | Description |
| users | Manages system users and authentication |
| assets | Tracks all physical and digital assets |
| asset\_models | Defines asset models and specifications |
| asset\_statuses | Manages asset lifecycle states |
| maintenance\_records | Tracks maintenance history |

## 3.2 System Diagrams

The following diagrams illustrate the system architecture and processes:

### System Context Diagram

[Diagram: System Context Diagram]

### Main Process Flow

[Diagram: Main Process Flow]

### Asset Management Flow

[Diagram: Asset Management Flow]

### Asset Registration Process

[Diagram: Asset Registration Process]