

Technical Documentation

Support Ticket Management System

Project Overview

A robust, Laravel-based solution designed to streamline customer support interactions, manage ticket lifecycles, and enhance team productivity.

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System Architecture

The system follows a standard Model-View-Controller (MVC) architecture, utilizing Laravel's Eloquent ORM for database interactions and Blade for server-side rendering.

- **Frontend:** Tailwind CSS and Alpine.js for a responsive UI.
- **Backend:** PHP 8.2+ with Laravel 10 Framework.
- **Database:** PostgreSQL for relational data storage.
- **Cache/Queue:** Redis for session management and background jobs.

Key Features

The application includes several core modules to ensure an efficient workflow:

- ✓ **Role-Based Access Control:** Distinct permissions for Customers, Support Agents, and Administrators.
- ✓ **Ticket Management:** Full CRUD operations with status tracking (Open, In Progress, Resolved, Closed).
- ✓ **Comment System:** Internal notes for agents and public responses for customers.
- ✓ **Notifications:** Automated email alerts triggered by ticket updates.
- ✓ **Analytics Dashboard:** Real-time visualization of support metrics.

Database Schema

The following table outlines the primary data structures used in the application.

Table	Primary Key	Description
users	id	Stores user profile and authentication data.
tickets	id	Core ticket information and current status.
comments	id	Polymorphic table for internal and public messages.
categories	id	Classification for ticket routing.

Table 1: Core Database Tables

Development Roadmap

Current progress and upcoming milestones for the project:

- ✓ User authentication and profile management.
- ✓ Core ticket submission workflow.
- ☐ Integration with Third-Party CRM APIs.
- ☐ Mobile application for support agents.