GeoInsights - Geospatial Data Visualization Platform

Overview

GeoInsights is a comprehensive web application designed for tracking and visualizing vector-borne disease patterns through geospatial data analysis. The platform provides interactive maps, data filtering capabilities, and export functionality for public health professionals and researchers.

Key Features

* Interactive map visualization with clustering
* Data filtering by region, density, vector type, and year
* One-click data exports in multiple formats (CSV, GeoJSON, PDF, Excel)
* User authentication system (login/registration)
* Responsive design with dark/light mode toggle
* Dynamic data upload and processing

File Structure

text

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/geoinsights

├── index.html - Main landing page

├── map.html - Interactive map view

├── about.html - About page with team information

├── contact.html - Contact form page

├── login.html - User login page

├── register.html - User registration page

├── dashboard.html - Data dashboard (sample)

├── thankyou.html - Confirmation page after contact form submission

├── 404.html - Custom 404 error page

├── header.html - Shared header component

├── footer.html - Shared footer component

├── contact.php - PHP backend for contact form

├── cropped\_circle\_image.png - Application logo

Technical Stack

Frontend

* HTML5, CSS3, JavaScript
* Bootstrap 5 for responsive layout
* Leaflet.js for interactive maps
* Chart.js for data visualization
* jsPDF and SheetJS for PDF/Excel exports

Backend (PHP)

* User authentication (login/registration)
* File upload processing
* Email sending via PHPMailer

Installation & Setup

1. **Prerequisites**:
   * Web server (Apache recommended)
   * PHP 7.4 or higher
   * MySQL database (for user authentication)
2. **Setup**:
   * Clone or extract files to your web server directory
   * Configure database connection in PHP files if using authentication
   * Ensure PHP mailer is properly configured in contact.php
3. **Development**:
   * Run on local server (XAMPP, WAMP, or MAMP recommended)
   * No build process required - works with static files

Usage

1. **Map View** (map.html):
   * Upload JSON/CSV data files
   * Filter data using the sidebar controls
   * Export filtered data in CSV or GeoJSON format
   * Export map visualizations as PDF
2. **Authentication**:
   * Register new accounts at /register.html
   * Login at /login.html
   * Session persists across pages
3. **Data Export**:
   * CSV export for spreadsheet analysis
   * GeoJSON export for GIS applications
   * PDF export for reports and presentations
   * Excel export with multiple sheets (data + summaries)

Customization

1. **Styling**:
   * Custom CSS variables in :root for theming
   * Dark/light mode support
   * Color scheme can be modified in CSS variables
2. **Configuration**:
   * API endpoints in JavaScript files
   * Email settings in contact.php

Dependencies

All dependencies are loaded via CDN:

* Bootstrap 5.3.3
* Leaflet.js 1.9.4
* Chart.js
* jsPDF
* SheetJS (xlsx)
* Font Awesome icons
* Google Fonts (Inter)

Known Issues

* Map PDF export may have rendering issues with very large datasets
* Some mobile devices may experience performance issues with complex maps

License

This project is open-source. Please include attribution if used as a base for other projects.

Support

For support or feature requests, please use the contact form at /contact.html or email louisnderitu20@gmail.com.