

Plant Health Monitor Setup Guide

Welcome to the Plant Health Monitor setup guide. This comprehensive mobile web application leverages multiple hardware components and secure HTTPS communication to provide real-time plant health monitoring with AI-powered recommendations.

Our application integrates with your device's GPS, camera, microphone, and simulated light and temperature sensors to deliver accurate plant health analysis. This guide will walk you through the setup process and highlight key features.

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Hardware Integration & Features



Camera

Captures plant images for visual health analysis using computer vision to assess leaf color and texture.



GPS

Tracks plant location for climate analysis and provides location-based recommendations.



Microphone

Monitors sound levels for pest detection through pattern analysis of environmental sounds.



Sensors

Measures ambient light and temperature (simulated via camera API) for environmental assessment.



Project Structure

Frontend

- userdashboard - Mobile web application
- Registration page for new users
- Login page for returning users
- Privacy page with data policies

Backend

- api/plant-userdashboard.php - API endpoint
- config/database.php - Database configuration

Security

- HTTPS enforcement



Server Requirements & Database Setup

Server Requirements

- PHP 7.4+
- MySQL 5.7+
- Apache/Nginx with SSL support
- OpenSSL extension
- PDO MySQL extension

Database Setup

Create database and user with appropriate privileges:

```
CREATE DATABASE plant_monitor;CREATE USER 'plant_user'@'localhost'  
IDENTIFIED BY 'secure_password';GRANT ALL PRIVILEGES ON  
plant_monitor.* TO 'plant_user'@'localhost';FLUSH PRIVILEGES;
```



API Endpoints & Data Flow



Client Request

Mobile app collects sensor data (GPS, light, sound, temperature, image) and sends to API endpoint

Server Processing

Backend validates input, processes data through AI analysis modules, and generates health assessment

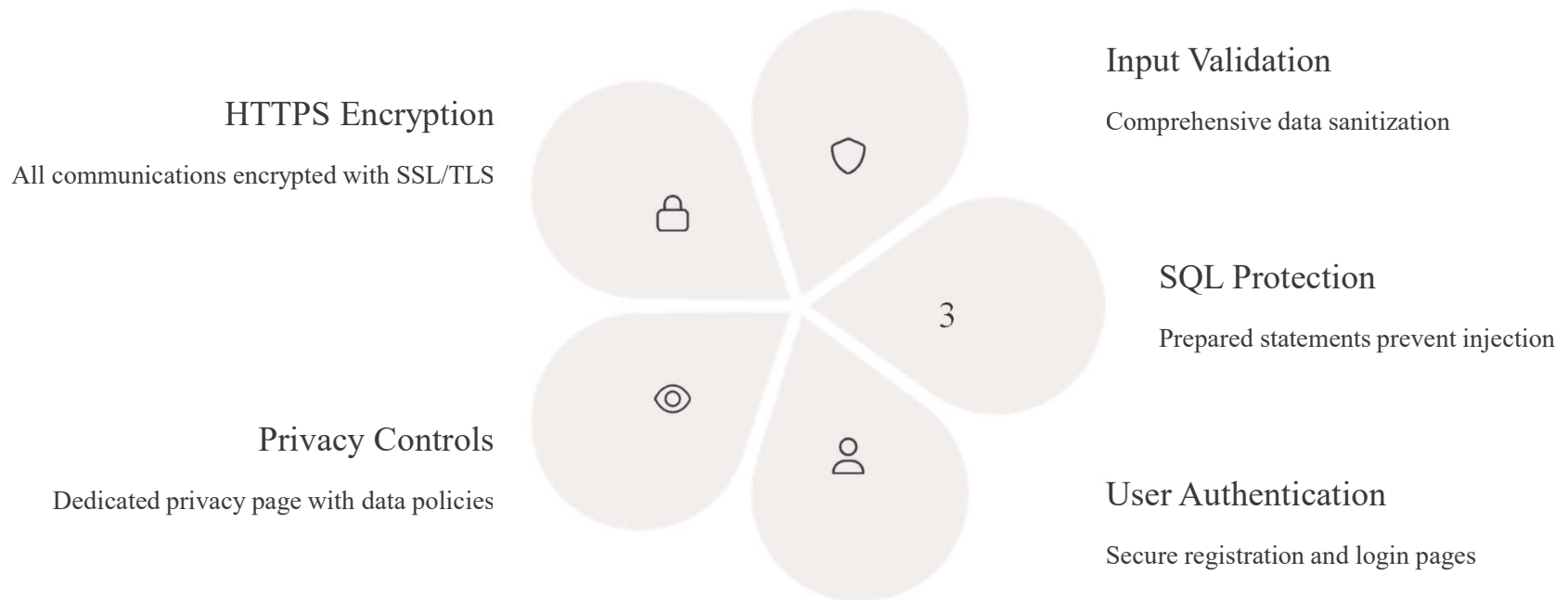
Data Storage

Results stored in database for historical tracking and trend analysis

Response Delivery

Health level, score, recommendations, and detailed analysis returned to client

Security Features & User Management



Deployment Checklist



Server Rack
Database



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To be Done.

Testing & Deployment Checklist



Hardware Permission Testing

Verify camera, microphone, and GPS access using provided JavaScript test code. Ensure all hardware components function correctly across supported browsers.



API Testing

Test API endpoint using curl or Postman to verify proper data handling and response formatting. Check for correct analysis results and recommendation generation.



Deployment Verification

Confirm SSL certificate installation, database configuration, PHP extensions, file permissions, error logging, security headers, and CORS settings before final deployment.



Browser Compatibility

Ensure compatibility with Chrome 70+, Safari 13+, Firefox 68+, and Edge 79+ on both Android and iOS devices.