Android Application for Real-Time Monitoring of Plant-Wearable IoT System

A LIGHTWEIGHT, INTUITIVE MOBILE DASHBOARD FOR BIOSIGNAL VISUALIZATION AND STRESS ALERTS

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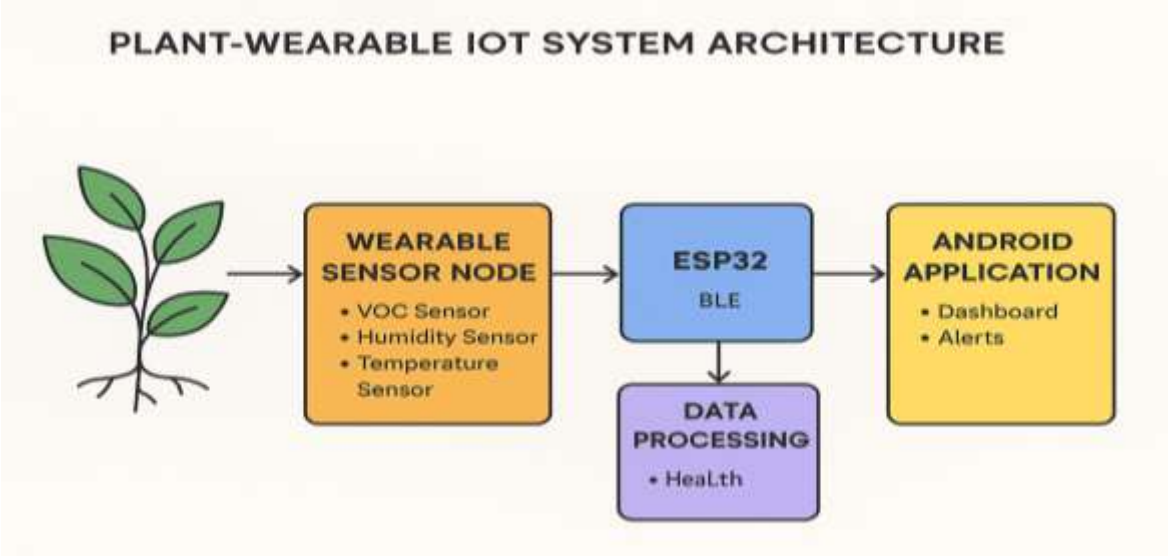
Project Overview

- • A flexible sensor patch monitors plant health using VOC, temperature, and humidity signals
- • ESP32-based microcontroller transmits data via Wi-Fi or BLE
- • System designed for real-time monitoring and early disease detection in crops



Why an Android App?

- Visualizes plant biosignals in real-time
- Issues alerts when stress thresholds are crossed
- Field-friendly tool for farmers and researchers
- Enables logging, monitoring, and decision-making

- Benefits:
- • Portable and responsive
- • Works offline (with future storage integration)
- • Customizable thresholds for alerts

Key Features of the App

- • Real-time data display: VOC, Temp, Humidity
- • Live graph visualization with MPAndroidChart
- • Alert system for critical conditions (color-coded + notifications)
- • Sensor connection status (Connected / Disconnected)
- • Alert history log and manual thresholds

4-Week Timeline

- Week 1: Requirement analysis, Figma wireframes, Data flow planning
- Week 2: Android Studio setup, BLE/Wi-Fi mock data integration
- Week 3: Graph integration, Alert system, UI polishing
- Week 4: Testing, Documentation, Final demo & presentation

Expected Outcomes & Impact

- Intuitive app to support real-time, on-field plant monitoring
- Enables early detection of stress and diseases
- Customizable system: adaptable to other crops and sensors
- Supports research goals for smart agriculture

- Thank you!
- Looking forward to feedback and collaboration.