Progress Report: PlantWearable Android Application

1. Overview
This report summarizes the progress made during Week 2 on the PlantWearable Android Application. The key areas of development include screen design, navigation architecture, BLE device integration, threshold settings, sensor simulation, and UI enhancements based on project goals.

2. Deliverables
• GitHub repository updated with functional app screens and logic

• Short demo video recorded

• Weekly progress PDF

3. Features Developed This Week
- **Sensor Connection Screen:** With pairing interface and dummy scan mode to simulate device discovery (until physical sensors are available).
- **Dashboard Screen:** Real-time display of mock VOC, temperature, and humidity data with color-coded health status indicators.
- **Alerts & Thresholds:** Alert system based on VOC > 50, Temp > 35°C, Humidity < 40%, with a notification and visual UI triggers.
- **Trends Screen:** Graphs for each parameter using MPAndroidChart (VOC, Temp, Humidity).
- **Settings Page:** Dropdowns for plant type & sync interval, and sliders for VOC threshold.
- **Plant Info & Recommendation Screen:** Displays plant-specific image and care suggestions based on health parameters.

4. Questions for Clarification

To ensure the app architecture aligns closely with your research needs and upcoming sensor deployment, I would appreciate your guidance on a few points:

1. **Expected Data Structure & Frequency**
   - What is the typical sampling rate or update interval from the sensor module?
   - What are the key parameters besides VOC, temp, and humidity (e.g., CO_2, pH planned)?
2. **Preferred Graph Type for Raw Data**
   Do you envision using line graphs, gauges, or hybrid visualizations to display trends? Any preferred standard?
3. **Threshold Setting Approaches**

   Would you prefer a fixed/manual threshold system in the app or a dynamic one (e.g., based on past values or plant-specific profiles)?

4. **Recommendation Engine**
   For the plant-specific suggestion engine (watering, stress status), do you have any research-backed logic, or shall I build it rule-based from VOC/Temp trends for now?
5. **Sensor Simulation Until Hardware**
   Currently, mock data simulates sensor outputs. Is it acceptable to proceed with a full UI demo using this mock stream for your presentations/publications until physical sensors are available?

5. Next Steps

- Integrate actual sensor values once BLE hardware is available
- Implement local storage or Firebase to save user settings and history
- Polish UI with animations and alerts
- Work on backend syncing or dashboard analytics as per feedback

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