MVP SNAPSHOTS

Team · Mechanics 2.0
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E-Waste Management MVP Snapshot

Key Features:

- **Mobile App Interface (Google Firebase):**
  - User registration, waste disposal tracking, and reward system.
- **IoT-Enabled Smart Bins (Google Cloud IoT Core):**
  - Waste level monitoring and automatic waste detection via real-time sensor data.
- **AI Waste Classification (Google Gemini AI, Vertex AI):**
  - Real-time classification of e-waste as recyclable, hazardous, or special disposal.
- **Blockchain Tracking (Google Cloud Blockchain Services):**
  - Secure, transparent tracking of waste disposal and reward issuance.
- **Certified Recycling Integration (Google Cloud Functions, Pub/Sub):**
  - Real-time interaction with recycling centers for responsible processing.

User Flow:

1. **User Disposes of E-Waste** →
2. **IoT Detects Item (Google Cloud IoT Core)** →
3. **AI Classifies Waste (Google Gemini AI/Vertex AI)** →
4. **Blockchain Logs Transaction (Google Cloud Blockchain Services)** →
5. **Recycling Process Confirmed (Google Cloud Functions)** →
6. **User Receives Rewards (Google Firebase)**

Technologies Used:

- **Mobile App (Google Firebase):** For user interaction, authentication, and rewards tracking.
- **AI (Google Gemini AI, Vertex AI):** For waste classification and chatbot assistance.
- **Blockchain (Google Cloud Blockchain Services):** For secure, transparent tracking and reward management.
- **IoT (Google Cloud IoT Core):** For monitoring real-time data from waste bins.
- **Recycling Center Integration (Google Cloud Functions & Pub/Sub):** For seamless communication with certified recycling centers.

Future Enhancements:

- **AI Model Improvement** for better classification with Google Vertex AI.

- **Expanded Reward System** with Google Firebase for user incentives.
- **More IoT Bins & Recycling Centers** integration with Google Cloud services.

- We are actively developing a fully functional solution powered by **Google technologies** like **Gemini**, **IDX**, and **AI**. By integrating **Blockchain**, **IoT**, and smart analytics, our system ensures efficient, transparent, and sustainable e-waste management.

This isn't just an idea – we are building a **working prototype** to automate waste classification, secure transactions, and reward responsible recycling. Innovation takes time, and we are committed to delivering a robust and scalable solution.

Stay tuned – our **MVP** will be live soon, with the project link coming shortly. The future of smart e-waste management is in progress.

The basic frontend has been completed and is outlined in the PowerPoint presentation. You can find the link to the GitHub repository included.

~Thank You
Mechanics 2.0 Team