AI VidyaSetu 1.0 – Code for New Bharat
Design Thinking Assessment - WasteSort+ (Implementation Beta)
Theme: Viksit Bharat 2047 – Environment, Waste & Circular Economy
Assignment: AI-powered WasteSort+ App for Smart Waste Management
Team Members: Navdeep Singh, Ritik, Anjali, Taruna

Step 1: Problem Statement
Residents in our community face serious hygiene and health issues due to irregular garbage collection, resulting in overflowing dustbins and an unhealthy environment.
How Might We: How might we create a smart waste management solution that ensures regular collection and prevents garbage overflow in residential colonies?
Theme: Environment, Waste & Circular Economy under Viksit Bharat 2047. If solved, it will improve public health, reduce diseases, and make colonies cleaner.

Step 2: Brainstormed Ideas & New App
Smart dustbins with sensors.

AI-powered waste segregation mobile app.

Mobile reporting app.

GPS for trucks.

Reward-based recycling system.

Selected Idea: WasteSort+ (AI-enabled mobile app for real-time waste segregation and reporting).
Why: Uses smartphone camera and AI to identify waste type before disposal, guides correct sorting, integrates with smart bins, supports fill-level alerts.

Step 3: Solution Overview & Features
WasteSort+ is an AI-based mobile app. Users scan waste using their phone, app guides to correct bin (wet/dry/recyclable), sends proper sorting data to IoT-enabled bins, optimizes collection schedules.
Tech: Python, Android Studio, TensorFlow Lite, Firebase. Integrates with ultrasonic sensors, cloud, and dashboards for staff/authorities.
Key Features: Real-time waste type detection, fill-level/segregation alerts, resident issue reporting, cleanliness dashboard tracking correct/incorrect segregation.

Step 4: Testing Strategy & Success
Residents use app to scan waste, get sorting guidance, report overflow.

Sanitation workers receive optimized task list via app/dashboard.

Authorities monitor bins + segregation data on dashboard.
Metrics: >80% proper segregation at source, 80% fewer overflow bins, 92% waste recognition accuracy, user rating >4.7/5, 80% adoption.
Feedback: In-app ratings, interviews, clarity/usability surveys.

Step 5: Improvements & Next Steps
Add more regional languages.

Update AI model with new waste images.

Pilot RFID tracking for participation/rewards.

Increase sensor durability; further integrate app with municipal notifications/payment.

Pilot with 25 households, refine guidance via real user feedback, then mass rollout.

App Name: WasteSort+ (Implementation Beta)

- Core Change: Brand-new approach using AI waste-sorting at source—not just bin alerts—with revised strategy & improvements.