

Smart Waste Segregation System

Innovative sensor-driven solution for efficient waste management



PROBLEM STATEMENT

-  **Mixed Waste Disposal**: People often throw wet and dry waste together despite separate bins.
-  **Inefficient Waste Management**: Mixed waste makes recycling and processing difficult.
-  **Manual Sorting Burden**: Workers spend extra time sorting waste by hand, risking health.
-  **Environmental Impact**: Poor segregation causes pollution and hygiene issues.

OBJECTIVE

To design and implement an intelligent waste segregation system that automates the separation of wet and dry waste, enhancing efficiency and hygiene in waste management.

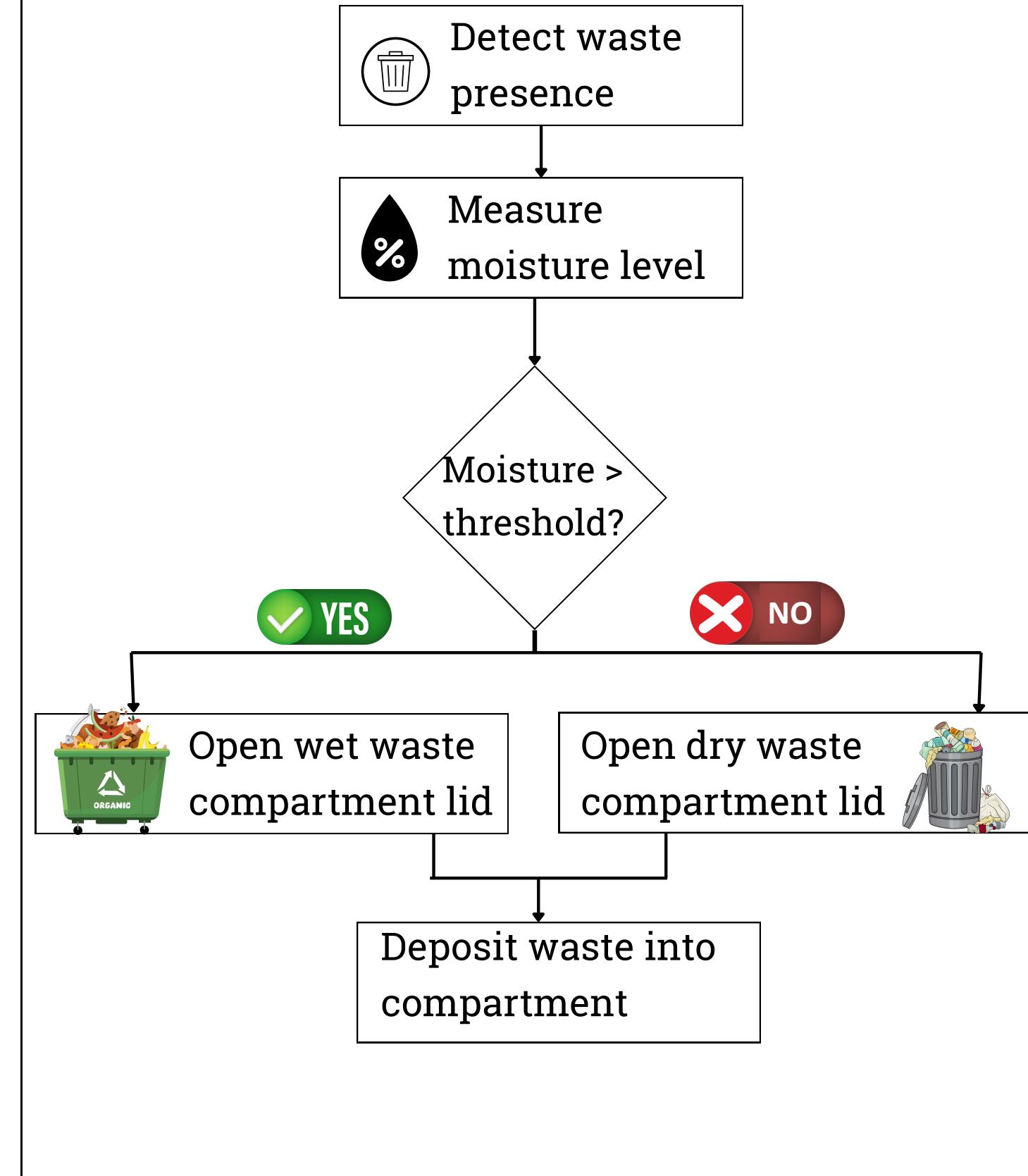


SOLUTION PROPOSED

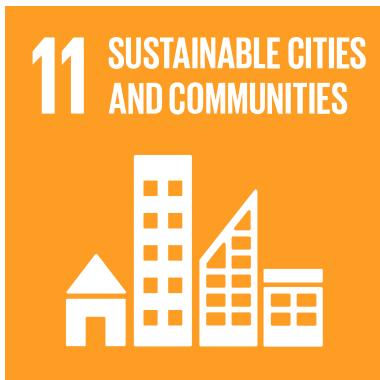
- ♻️ Automatically separates waste into categories.
- ♻️ Directs waste to the right compartment.
- ♻️ Reduces manual sorting effort.
- ♻️ Enhances cleanliness and recycling.
- ♻️ Improves waste management at source.

KEY FEATURES

- ♻️ Automatic Waste Sorting
- 🔒 Smart Compartment Control
- 🛡️ Hygienic Disposal
- 👉 Reduced Manual Labor
- ♻️ Promotes Recycling

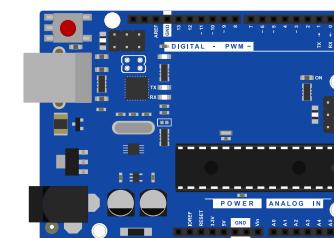


SMART WASTE, SMARTER PLANET: CONNECTING TO SDGS

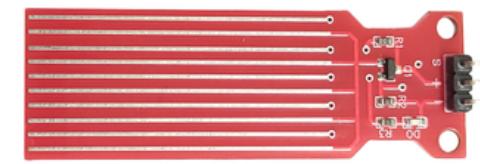


TECHNOLOGIES TO BE USED

MICROCONTROLLER



WATER LEVEL SENSOR



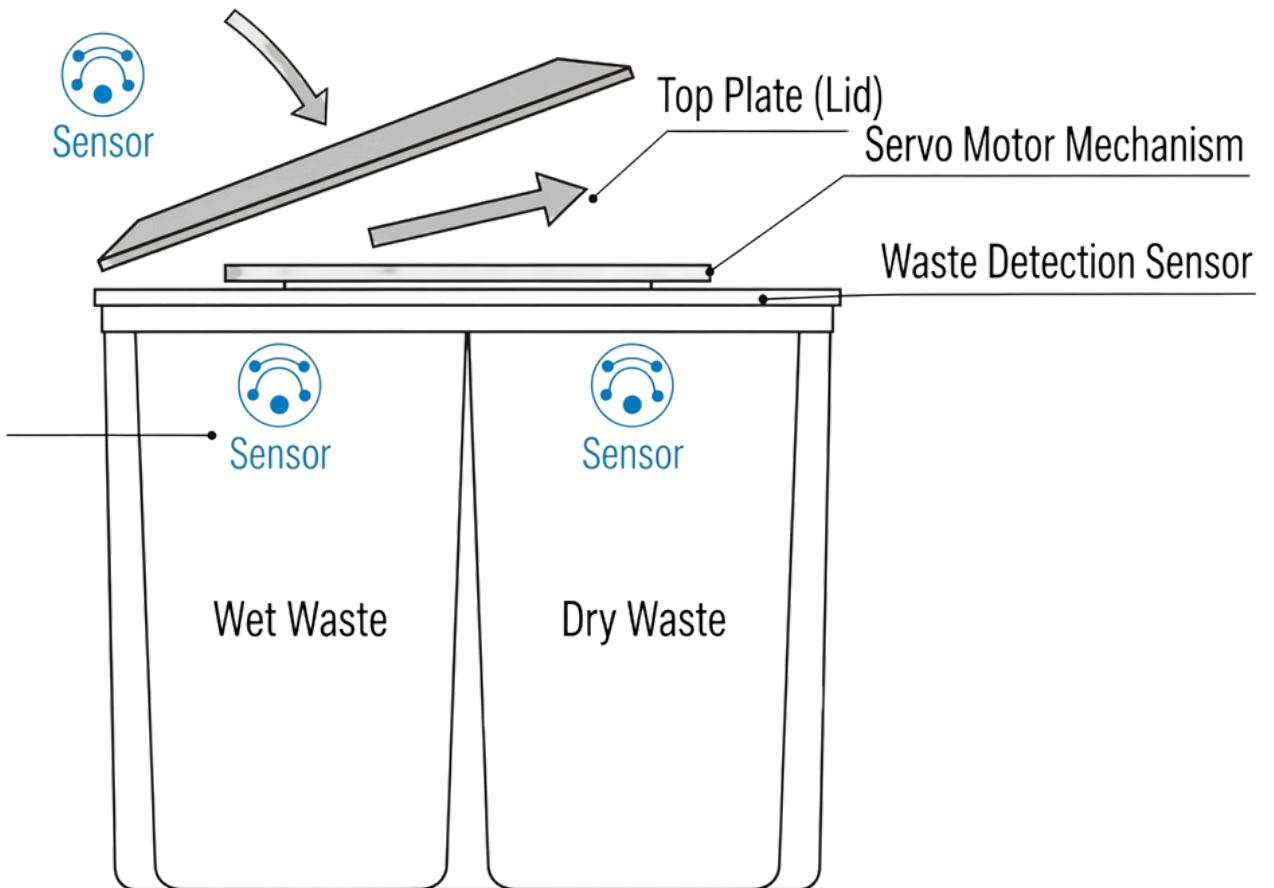
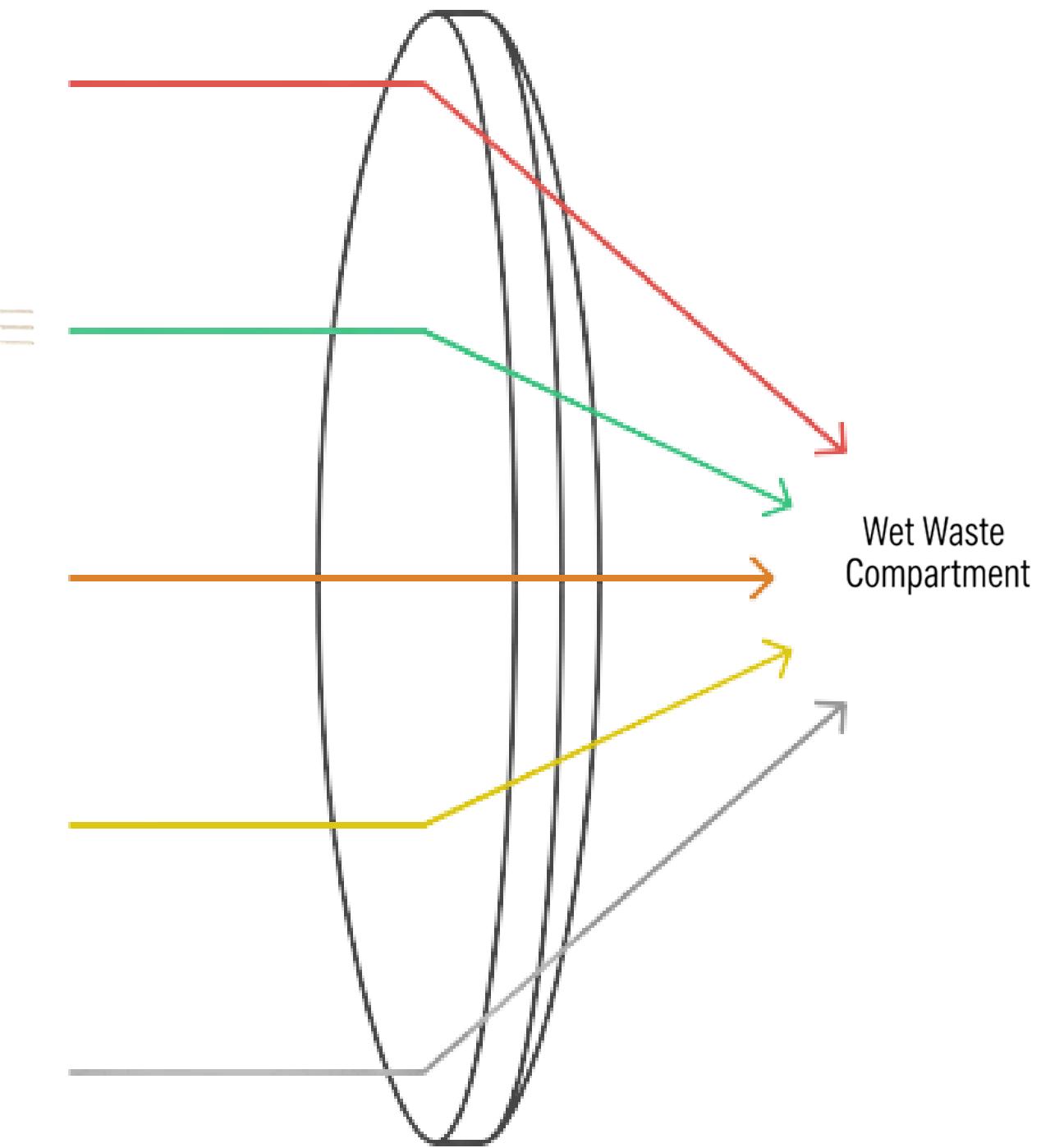
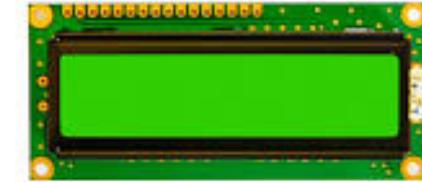
SERVO MOTOR



POWER SUPPLY



DISPLAY



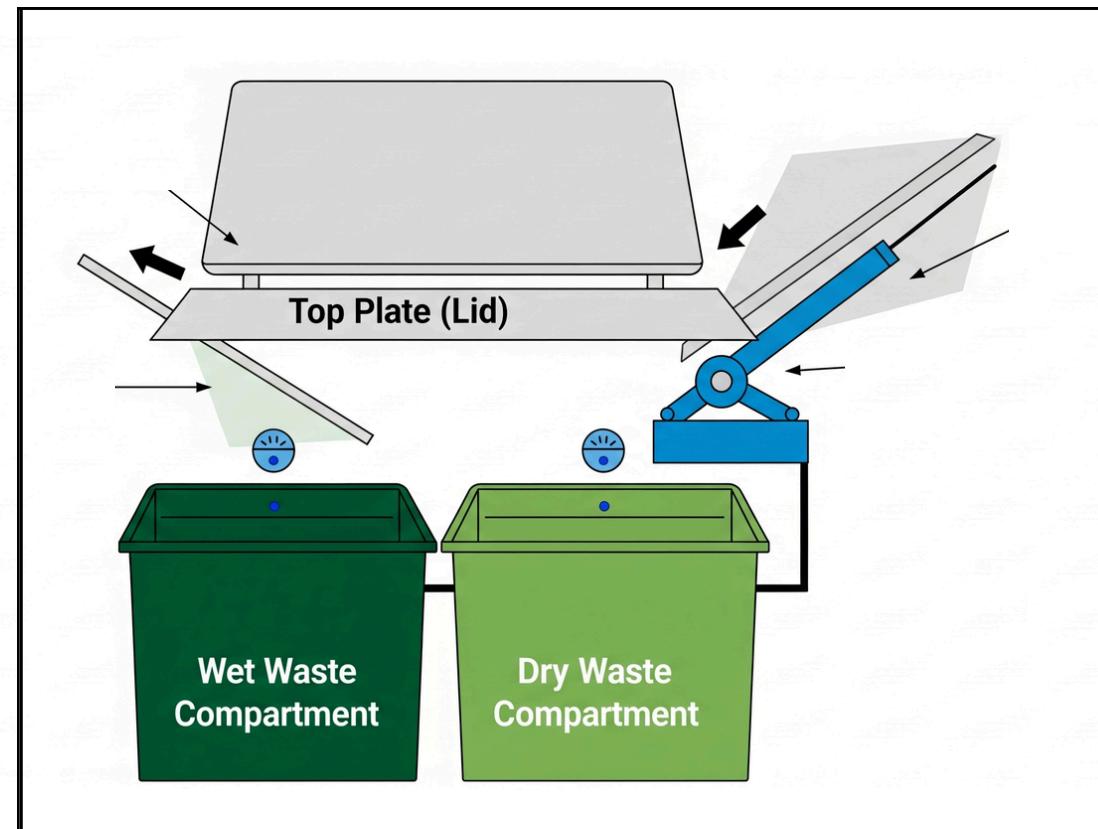
PLANNED PROTOTYPE DESIGN

Water Level Sensor

Detect waste type above each compartment

Servo Motor

Controls lid movement for accurate waste direction



Compartments

Separate Wet and Dry Waste sections

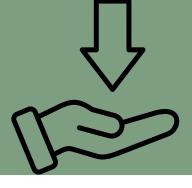
Lid Mechanism

Single movable top plate shifts based on waste type

Design

Clean, compact, and user-friendly

CHALLENGES AND NEED

 NEED	 CURRENT SITUATION
Promote efficient waste disposal at source	Majority of waste is disposed unsegregated
Prevent mixing of recyclable and non-recyclable waste	Overburdened landfill sites
Reduce health hazards from improper waste handling	Low recycling percentages due to contamination
Encourage environmental responsibility	Increasing urban waste generation

