SmartDustbinWasteSegregation.ino

```
#include <CheapStepper.h>
#include <Servo.h>

#define ir 5
#define proxi 6
#define buzzer 12
#define wetSensorPin A0

Servo servo1;
CheapStepper stepper(8, 9, 10, 11);

void setup() {
  Serial.begin(9600); // Start Serial Monitor
  pinMode(proxi, INPUT_PULLUP);
  pinMode(ir, INPUT);
  pinMode(buzzer, OUTPUT);

  servo1.attach(7);
  stepper.setRpm(17);

  // Initialize lid to closed
  servo1.write(180);
  delay(1000);
  servo1.write(70);
  delay(1000);
}

void loop() {
  // Proximity Sensor Logic (just open/close lid)
  if (digitalRead(proxi) == LOW) {
    Serial.println("Proximity Detected!");  // Print when proximity sensor detects
    tone(buzzer, 1000, 1000);
    servo1.write(180); delay(1000);  // Open
```

```
  servo1.write(70);  delay(1000);  // Close
 }

 // IR Sensor (Dry Waste or Metal Waste)
 if (digitalRead(ir) == LOW) {
  Serial.println("Dry Waste Detected!");  // Print when IR sensor detects dry waste or metal
  tone(buzzer, 1000, 500);
  delay(1000);
  stepper.moveDegreesCW(120); delay(1000);
  servo1.write(180); delay(1000);
  servo1.write(70);  delay(1000);
  stepper.moveDegreesCCW(120); delay(1000);
 }

 // Wet Sensor (Soil Moisture)
 int moisture = analogRead(wetSensorPin);
 Serial.print("Moisture: ");
 Serial.println(moisture);

 if (moisture < 600) { // Wet detected
  Serial.println("Wet Waste Detected!");  // Print when wet waste is detected
  tone(buzzer, 1000, 500);
  delay(1000);

  stepper.moveDegreesCW(180); delay(1000);
  servo1.write(180); delay(1000);
  servo1.write(70);  delay(1000);
  stepper.moveDegreesCCW(180); delay(1000);
 }

 delay(500); // Small pause between checks
}
```