

# Human Following Automated Lid Opening and Locking Dustbin

## 1. Components and Pinouts for the Dustbin Part

Component	Macro Name	Arduino Pin Number	Description
Human Detection Ultrasonic Sensor - Trigger	trigH	3	Sends trigger signal to detect human
Human Detection Ultrasonic Sensor - Echo	echoH	2	Receives echo signal from detected human
Garbage Level Ultrasonic Sensor - Trigger	trigG	4	Sends trigger signal to measure garbage level
Garbage Level Ultrasonic Sensor - Echo	echoG	5	Receives echo signal for garbage level
Red LED (indicates full bin)	LED	6	Turns on when bin is full
Lock Mechanism (simulated with LED/Relay)	lockPin	7	Engages/disengages lock mechanism
Servo Motor (for bin lid)	servoPin	9	Controls the lid opening and closing

## 2. Components and Pinouts for the Human Following Part

Component	Macro Name	Arduino Pin	Description
Left IR Sensor	irLeft	A0	Detects object or line on the left side
Right IR Sensor	irRight	A1	Detects object or line on the right side
Ultrasonic Sensor - Trigger	trigPin	9	Sends ultrasonic pulse to measure distance
Ultrasonic Sensor - Echo	echoPin	8	Receives echo pulse from object
Motor Driver IN1 (left motor input)	in1	2	Controls direction of left motor
Motor Driver IN2 (left motor input)	in2	3	Controls direction of left motor
Motor Driver IN3 (right motor input)	in3	4	Controls direction of right motor
Motor Driver IN4 (right motor input)	in4	5	Controls direction of right motor
Motor Driver ENA (PWM for left motor)	ENA	6	Controls speed of left motor via PWM
Motor Driver ENB (PWM for right motor)	ENB	10	Controls speed of right motor via PWM