

Bill Of Material

COMPONENTS	PURPOSE	QUANTITY
ESP32 Dev Board	Main microcontroller (Wi-Fi + GPIO control for servos, OLED, LEDs)	1
ESP32-CAM Module	Camera + AI image recognition for waste classification	1
Micro Servo Motors (SG90)	Open/close lids for each bin	3
0.96" OLED Display (I2C)	Display on the screen which waste is detected and which bin is activated	1
LEDs (any color)	Acts as indicators for each bin classifier	3
Resistors for LEDs	(220k ohms)	3
Breadboard	For wiring and component support	1
DC-DC Stepdown Converter	Step down the voltage from the batteries to 5V as the required power supply to the circuit	1
Lithium Iron batteries	The main power supply to the circuit	4