

• **Software component used :**

Software	Name	Purpose / Notes
OS	Raspberry Pi OS (Lite/Desktop)	Main operating system
Python	Python 3.x	Programming language for main logic
Libraries	opencv-python	Image capture and processing
	numpy	Array operations
	pytesseract	OCR (removed if not used)
	tflite-runtime	Running TensorFlow Lite models
	RPi.GPIO	GPIO pin control
Bluetooth	espeak or gTTS + mpg321	Text-to-speech output
	bluez, pulseaudio	Bluetooth audio (optional)
Editor	Thonny IDE	Python development environment on Pi
Model Files	ssd_mobilenet.tflite	TFLite model for object detection
Labels	coco_labels.txt	Class labels for detected objects

• **Hardware component used:**

#	Tool Name	Purpose
1	Soldering Iron	For soldering sensor pins, GPIO headers, and component joints
2	Multimeter	For checking voltage, continuity, and testing connections
3	Wire Cutter	To cut jumper wires and other wiring materials cleanly
4	Plier / Nose Plier	For bending wires and holding components securely during assembly
5	Screwdriver	Used to tighten or loosen case and module screws
6	Card Reader	To flash the Raspberry Pi OS onto the microSD card from PC