

Materials and Procedures

There were many variations of each, I will start with oldest to newest.

The Original Materials List

- Elegoo smart robot car v4.0
- Photoresistor module
- Carbon monoxide module
- Temperature and Humidity sensor
- plastic platform
- Freenove 5 inch DSI screen
- GPIO extension board
- breadboard
- GPIO extension cable
- Raspberry pi 4 model b+
- jumper wires

The Original Procedure

- Assemble the robot following the instructions in the kit
- add the plastic platform using the support pillars and screws
- attach the rpi and screen to the platform
- wire the sensors
- code the sensors
- attach the battery to the platform with screws
- test the robot by driving it in light and dark, cold and hot, and place a lit match near the carbon monoxide detector

As you can see, these are a bit patchy.

Materials (Updated version)

- Elegoo smart robot car v4.0 with camera module
- Photoresistor module
- carbon monoxide module (Flying fish module)
- Temperature and Humidity sensor module
- chalkboard platform
- breadboard
- Arduino UNO
- computer
- jumper wires hardware

Procedure (Updated Version)

- assemble the robot
- ad the platform with screws and bolts
- wire the sensors
- code the sensors
- fix the UNO to the platform
- test the robot (driving in light and dark, cold and hot, place it by a lit match

Still quite patchy but it worked for a bit.

Materials (take 3)

- 16-2 LCD (Liquid Crystal Display) screen
- m7 Photoresistor module
- Flying Fish carbon monoxide module
- DHT11 Temperature and Humidity sensor
- a green LED
- an active buzzer
- a potentiometer
- 220k resistor (5 band)
- Arduino UNO
- Raspberry Pi case
- double sided tape
- jumper wires
- mini chalkboard
- hardware
- Elegoo v4.0 smart robot car kit
- a drill
- a computer
- Arduino cord
- battery pack
- 8 AA batteries

Procedure (take 3)

- Assemble the Elegoo kit
- drill holes in the top platform and the chalkboard
- secure the chalkboard on top of the platform using 4 screws, 8 nuts, and 8 washers
- secure the breadboard onto the surface of the chalkboard with double sided tape
- put double sided tape on the bottom of the battery pack (with batteries in it) and fix it to the robot car
- secure the Arduino to the bottom of the Pi case using two small screws
- fix the Pi case and Arduino across from the breadboard with double sided tape
- wire the Photoresistor module and LED
 - Photoresistor pin AO to analog zero (A0) on Arduino
 - pin DO to LED anode (positive) pin

- pin GND to negative column on the breadboard (ground)
- pin VCC to positive column on the breadboard (voltage, 5v)
- LED cathode pin to negative column on breadboard
- Wire the DHT11 temperature/humidity sensor
 - -pin to negative column
 - out pin to pin 7 on Arduino
 - + pin to positive column on breadboard
- Wire the CO module and active buzzer
 - module pin DO to Arduino to digital pin 8
 - GND pin to negative column
 - VCC pin to positive column
 - buzzer positive pin to digital pin ~9 on Arduino
 - buzzer negative pin to negative column
- Wire the LCD, resistor, and potentiometer
 - LCD pin 1 to negative
 - LCD pin 2 to positive
 - LCD pin 3 to middle of potentiometer
 - LCD pin 4 to digital pin 12
 - LCD pin 5 to negative
 - LCD pin 6 to digital pin ~11
 - LCD pins 7-10, nothing
 - LCD pin 11 to digital pin ~5
 - LCD pin 12 to digital pin 4
 - LCD pin 13 to digital pin ~3
 - LCD pin 14 to digital pin 2
 - LCD pin 15 to resistor to positive
 - LCD pin 16 to negative
 - Potentiometer left pin to positive
 - Potentiometer right pin to negative
 - Potentiometer middle pin to LCD pin 3
- Wire the Arduino to the breadboard
 - Super simple, just 5v to positive and GND to negative
- Write the code
- Upload the code
- connect for testing
- test the robot
- record results

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