Obstacle avoider

Arduino is the main processing unit of the robot. Out of the 14 available digital I/O pins, 7 pins are used in this project design.

- The ultrasonic sensor has 4 pins: Vcc, Trig, Echo and Gnd. Vcc and Gnd are connected to the +5v and GND pins of the Arduino. Trig (Trigger) is connected to the 9th pin and Echo is connected to 8th pin of the Arduino UNO respectively.

- A Servo Motor is used to rotate the Ultrasonic Sensor to scan for obstacles. It has three pins namely Control, VCC and GND. The Servo Control Pin is connected to pin 11 of Arduino while the VCC and GND are connected to +5V and GND.

- L293D is a 16 pin IC. Pins 1 and 9 are the enable pins. These pins are connected to +5V. Pins 2 and 7 are control inputs from microcontroller for first motor. They are connected to pins 6 and 7 of Arduino respectively.

- Similarly, pins 10 and 15 are control inputs from microcontroller for second motor. They are connected to pins 5 and 4 of Arduino. Pins 4, 5, 12 and 13 of L293D are ground pins and are connected to Gnd.

- First motor (consider this as the motor for left wheel) is connected across the pins 3 and 6 of L293D. The second motor, which acts as the right wheel motor, is connected to 11 and 14 pins of L293D.

- The 16th pin of L293D is Vcc1. This is connected to +5V. The 8th pins is Vcc2. This is the motor supply voltage. This can be connected anywhere between 4.7V and 36V. In this project, pin 8 if L293D is connected to +5V supply.