Lesson 15 Motor Driver

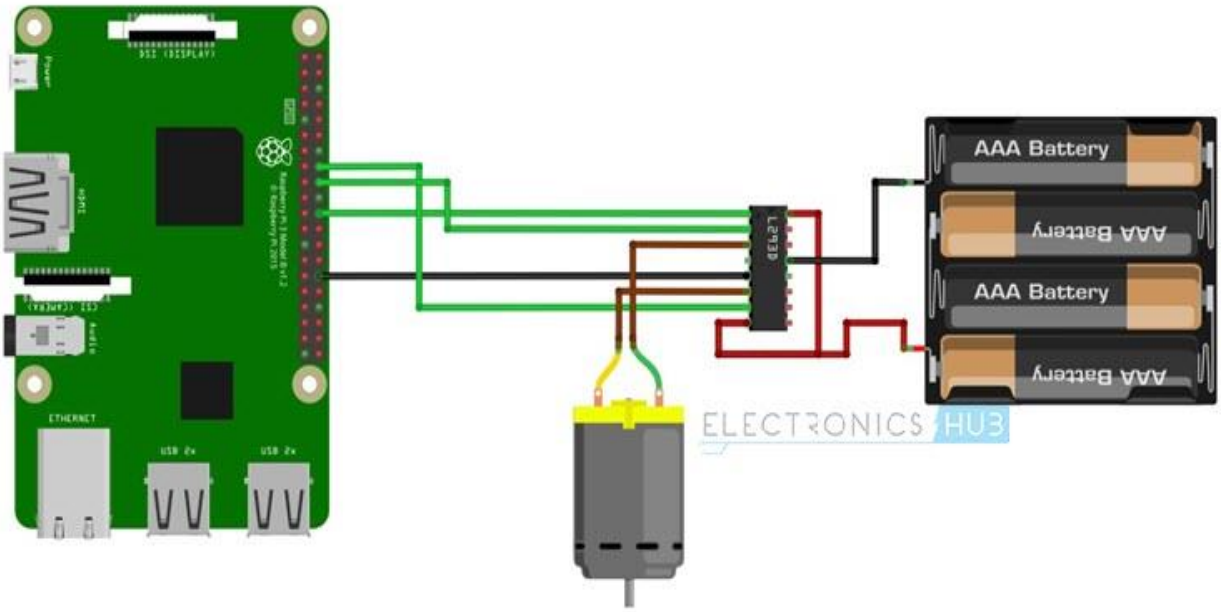
Introduction

This lesson describes how to control both the speed and direction of a DC motor using Python and a L293D chip. In this lesson we use pulses to control the speed of a regular DC motor and the L293D motor control chip to reverse the direction of the current through the motor and hence the direction in which it turns.

Hardware Required

- Raspberry Pi
- Motor Driver L293D
- 6V DC Motor
- 9V Battery Power Supply
- Jumper wires

Hardware Setup



If IN1,2 signal is logic(0,1) then Motor 1 Rotates in Opposite Direction.

(3) EN1 & EN2 are Enable pins. Connect 5V DC to EN1 & EN2 pin to operates Motor its normal rated Speed .
if Speed Control needed. then give PWM on EN1 and EN2 from Microcontroller

(4) Power for Motor.if 12V DC Gear Motor is Used Then apply 12V.

(5) Make sure to make GND common for all Circuit

Python Coding

```
import RPi.GPIO as GPIO

from time import sleep

GPIO.setmode(GPIO.BOARD)


Motor1 = 16    # Input Pin

Motor2 = 18    # Input Pin

Motor3 = 22    # Enable Pin


GPIO.setup(Motor1,GPIO.OUT)
```

```
GPIO.setup(Motor2,GPIO.OUT)

GPIO.setup(Motor3,GPIO.OUT)

 print "FORWARD MOTION"

GPIO.output(Motor1,GPIO.HIGH)

GPIO.output(Motor2,GPIO.LOW)

GPIO.output(Motor3,GPIO.HIGH)


sleep(3)


print "BACKWARD MOTION"

GPIO.output(Motor1,GPIO.LOW)

GPIO.output(Motor2,GPIO.HIGH)

GPIO.output(Motor3,GPIO.HIGH)


sleep(3)


print "STOP"

GPIO.output(Motor3,GPIO.LOW)


GPIO.cleanup()
```

Output

After successful of connection and python coding ,run the code and you will see motor is moving clockwise first and then after 3 second motor will rotate in anticlockwise direction, after 3 second motor rotation will stop.

Application

- Line Follower Bot
- Toy Motor Speed Control
- Pick and Place Robot