DC Motor

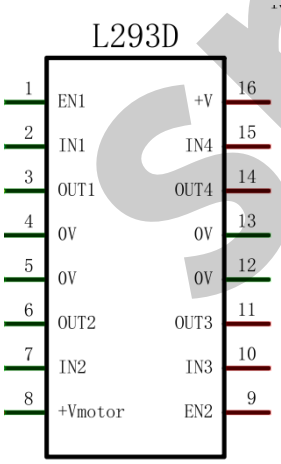
Overview

This lesson will teach you how to control the DC motor to turn, reverse and stop.

Specification

Motor:
Rated Voltage: DC 6V
Speed: 5000 RPM
L293d:
Please view L293d-datasheet.pdf.
Path: \Public_materials\Datasheet\ L293d -datasheet.pdf

Pin definition

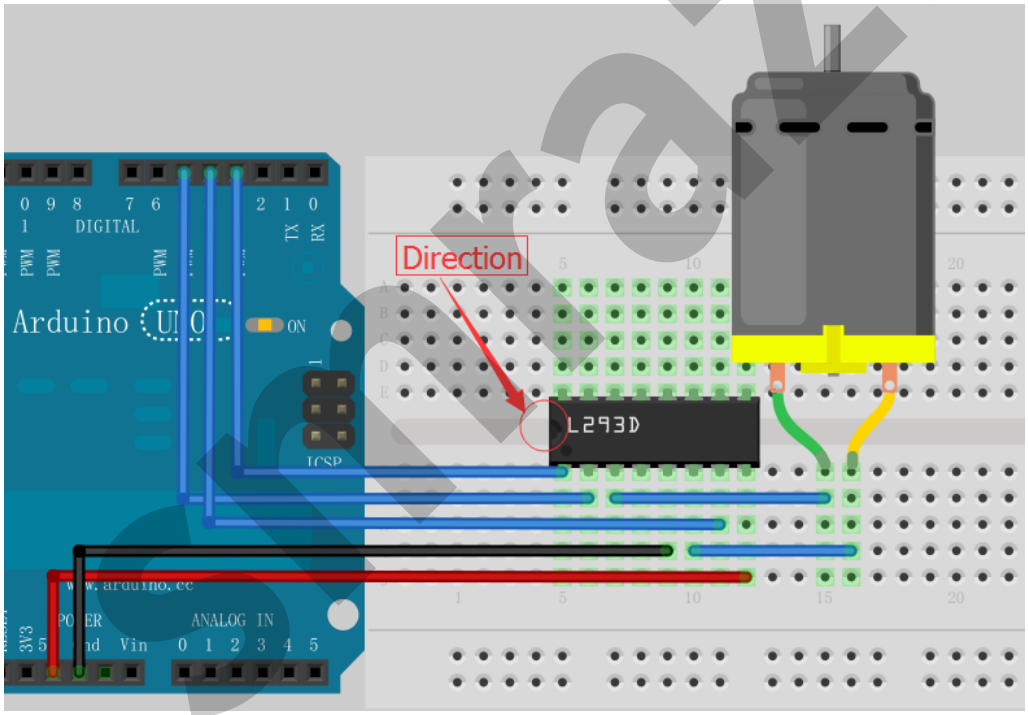


Hardware required

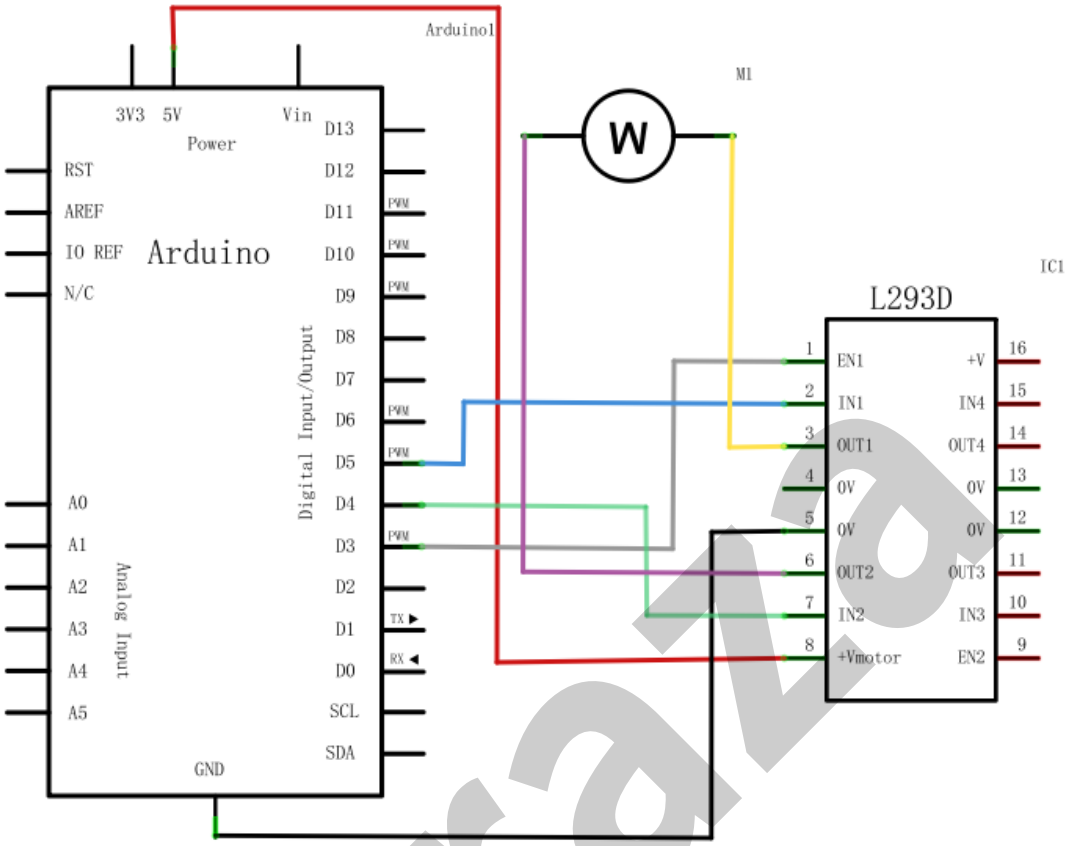
Material diagram	Material name	Number
	DC Motor	1

	IC L293D	1
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



Connection:



Note:
Pay attention to the direction of the IC L293D.

Sample code

Note: sample code under the **Sample code** folder

```
#define ENABLE 3
#define DIRB 4
#define DIRA 5
int i;
void setup()
{
   //---set pin direction
   pinMode(ENABLE,OUTPUT);
   pinMode(DIRA,OUTPUT);
   pinMode(DIRB,OUTPUT);
   Serial.begin(9600);
}

void loop()
{
   //---back and forth example
```

```
  Serial.println("One way, then reverse");
  digitalWrite(ENABLE,HIGH); // enable on
  for (i=0;i<5;i++) {
    digitalWrite(DIRA,HIGH); //one way
    digitalWrite(DIRB,LOW);
    delay(500);
    digitalWrite(DIRA,LOW);    //reverse
    digitalWrite(DIRB,HIGH);
    delay(500);
  }
  digitalWrite(ENABLE,LOW); // disable
  delay(4000);

  Serial.println("fast Slow example");
  //---fast/slow stop example
  digitalWrite(ENABLE,HIGH); //enable on
  digitalWrite(DIRA,HIGH); //one way
  digitalWrite(DIRB,LOW);
  delay(1000);
  digitalWrite(ENABLE,LOW); //slow stop
  delay(3000);
  digitalWrite(ENABLE,HIGH); //enable on
  digitalWrite(DIRA,HIGH); //one way
  digitalWrite(DIRB,LOW);
  delay(1000);
  digitalWrite(DIRA,LOW); //fast stop
  delay(3000);

//Serial.println("PWM full then slow");
  //---PWM example, full speed then slow
  digitalWrite(ENABLE,HIGH); //enable on
  digitalWrite(DIRA,HIGH); //one way
  digitalWrite(DIRB,LOW);
  delay(2000);
  analogWrite(ENABLE,128); //half speed
  delay(2000);
  digitalWrite(ENABLE,LOW); //all done
  delay(10000);
}
```

Language reference

Null

Application effect

You will see the DC motor will be turning, turning and stopping.