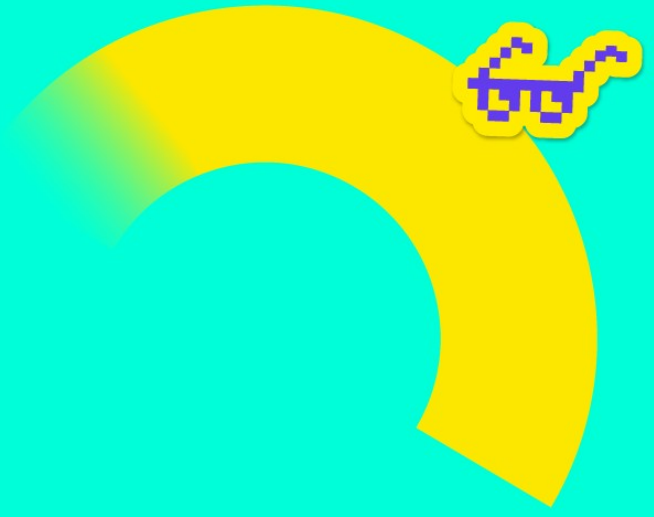
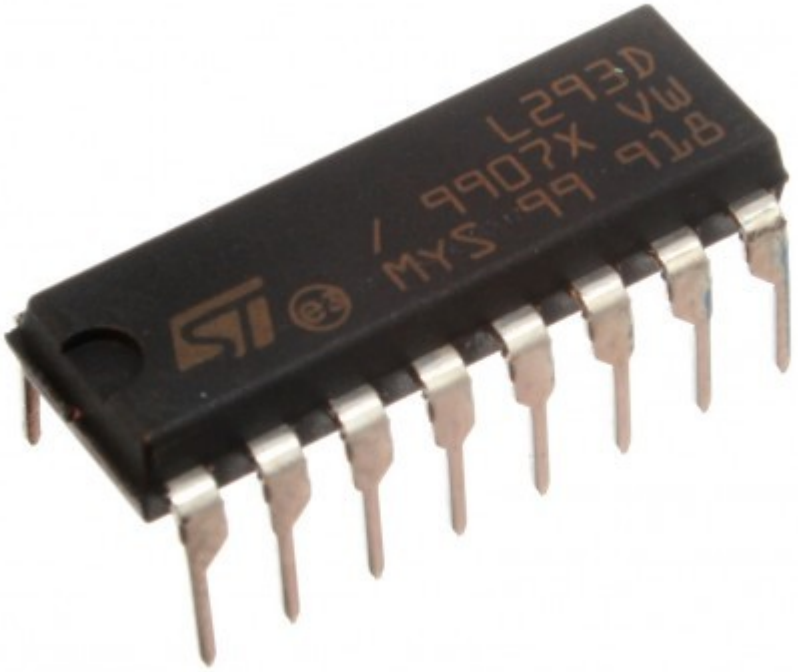
# Ejercicios de arduino

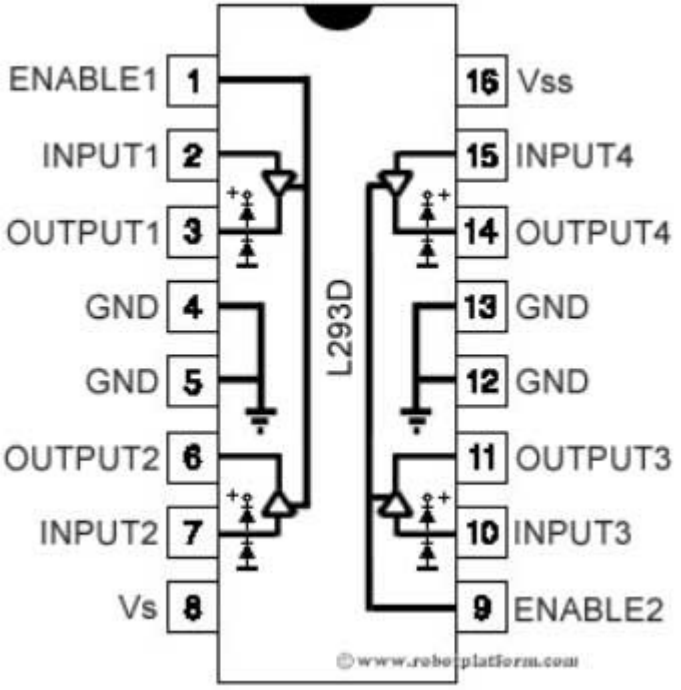


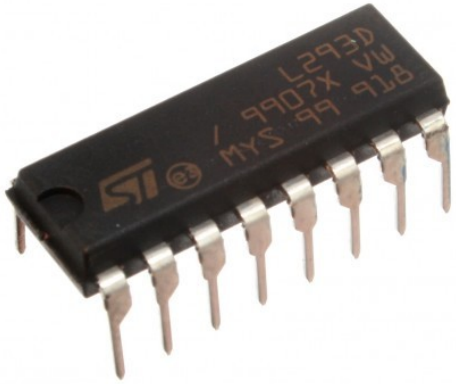
# Motores

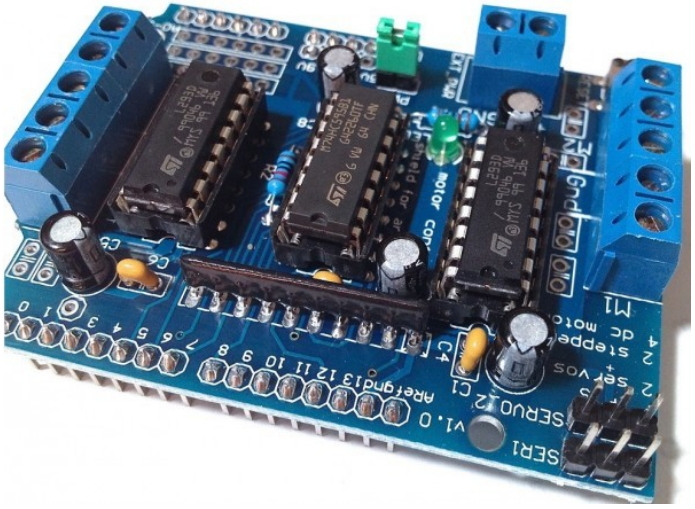


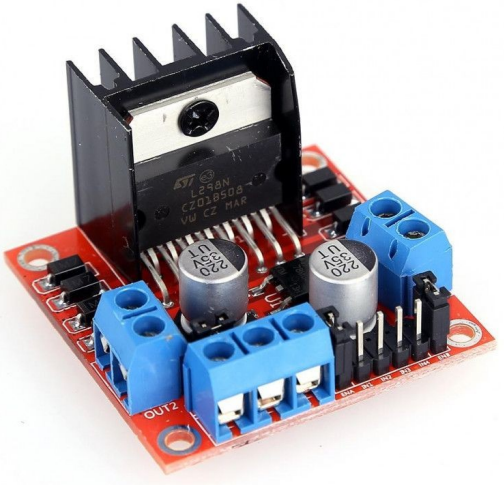
# L293

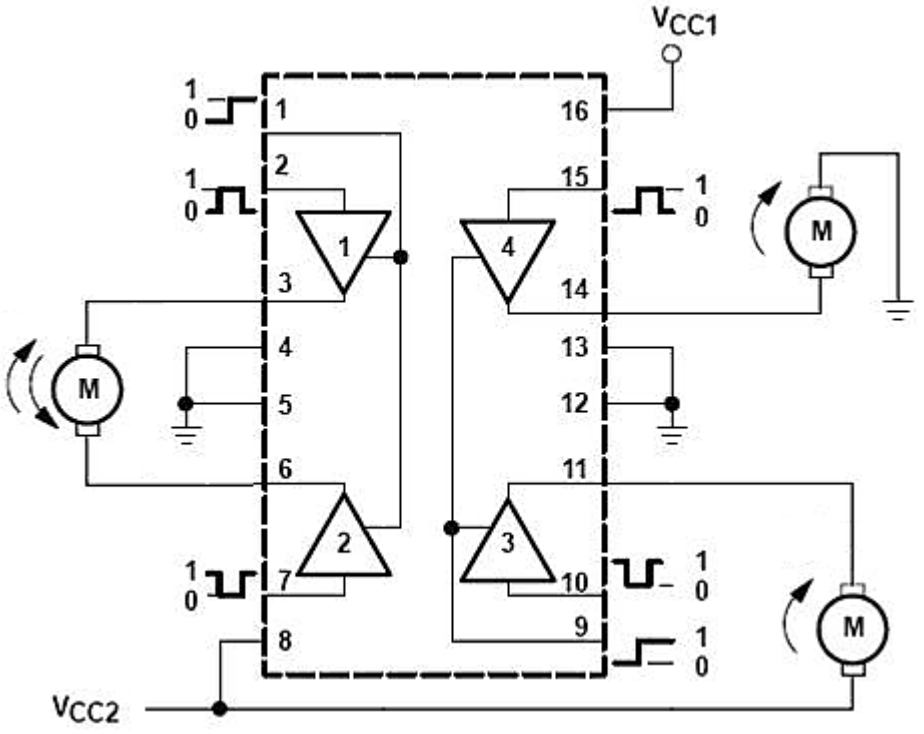

L293D
9907X VW
MYS 99 918


ENABLE1 1
INPUT1 2
OUTPUT1 3
GND 4
GND 5
OUTPUT2 6
INPUT2 7
Vs 8
16 Vss
15 INPUT4
14 OUTPUT4
13 GND
12 GND
11 OUTPUT3
10 INPUT3
9 ENABLE2
L293D
www.robotplatform.com

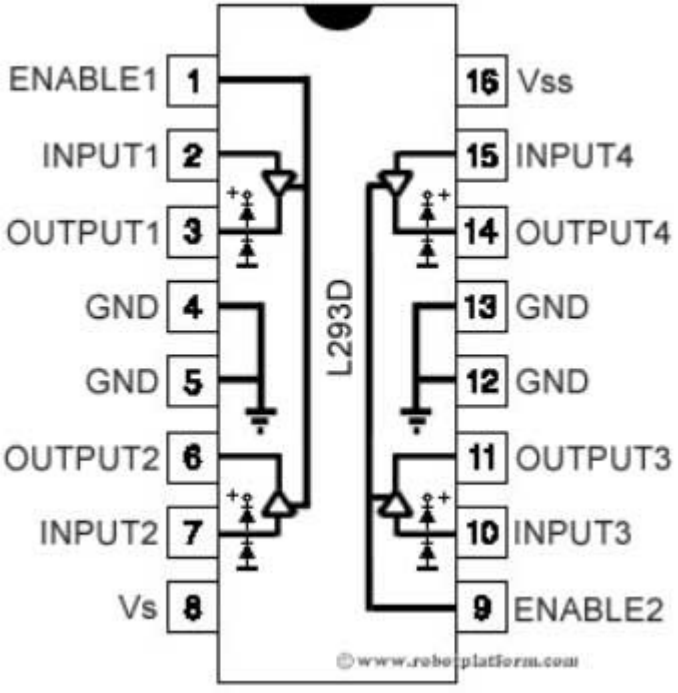

L293D
9907X VW
MYS 99 91B


SERVO
V1.0
M1

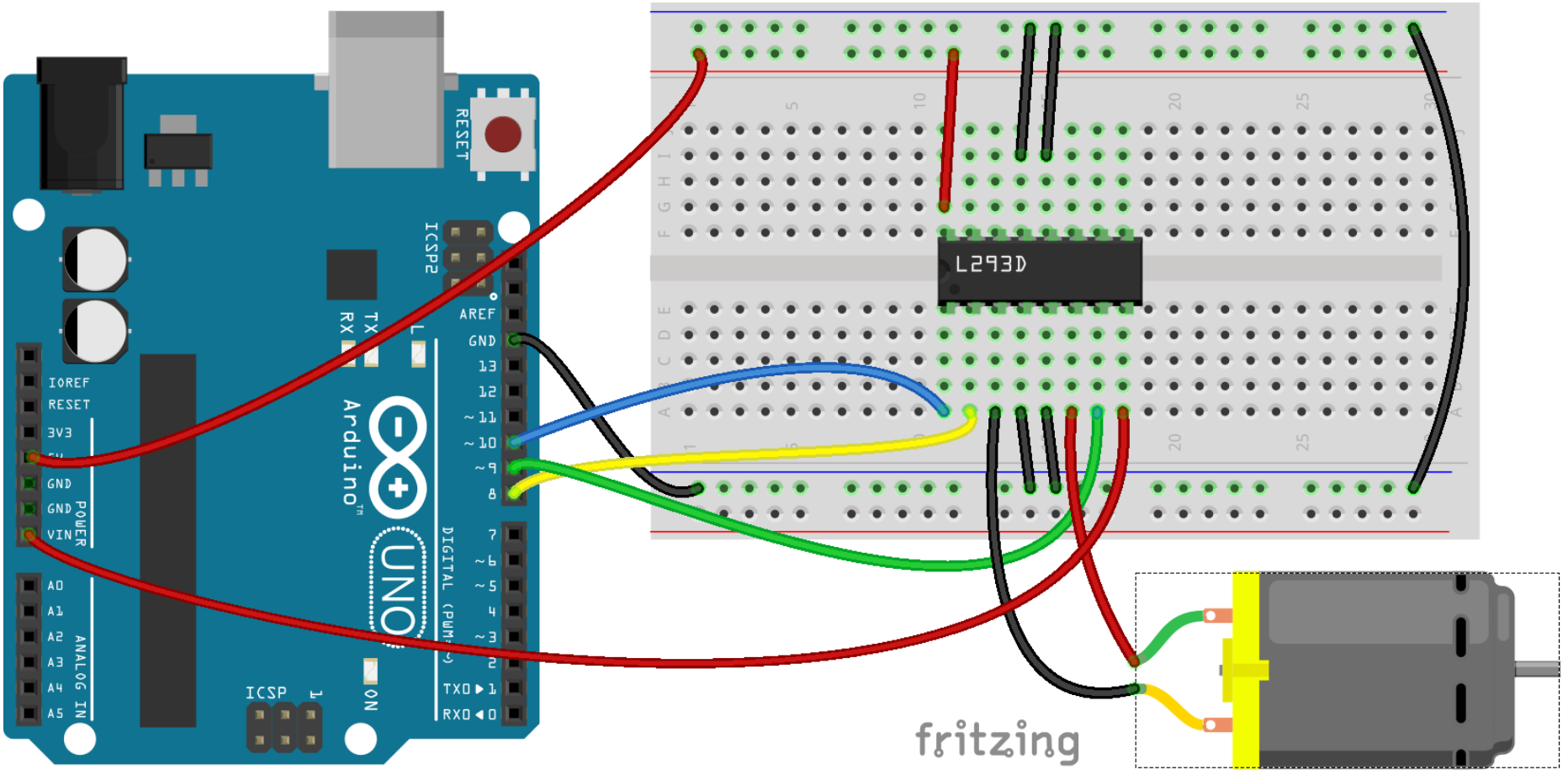

L298N
OUT2


VCC1
VCC2
1
0
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
M
M
M
1
2
3
4

| Enable motor 1 | Control motor 1 (Input 1) | Control motor 1 (Input 2) | Estado del motor |
|---|---|---|---|
| LOW | HIGH o LOW | HIGH o LOW | Motor deshabilitado (no avanza) |
| HIGH | HIGH | LOW | Avance |
| HIGH | LOW | HIGH | Retroceso |
| HIGH | HIGH | HIGH | Motor frenado |
| HIGH | LOW | LOW | Motor frenado |



# motor ON/OFF


L293D
RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TXO▶1
RXO◀0
DIGITAL (PWM~)
TX
RX
L
IOREF
RESET
3V3
GND
GND
VIN
POWER
A0
A1
A2
A3
A4
A5
ANALOG IN
ICSP
ON
Arduino™
UNO
fritzing

```
#define E1 10  // Enable Pin for motor 1
#define I1 8     // Control pin 1 for motor 1
#define I2 9     // Control pin 2 for motor 1

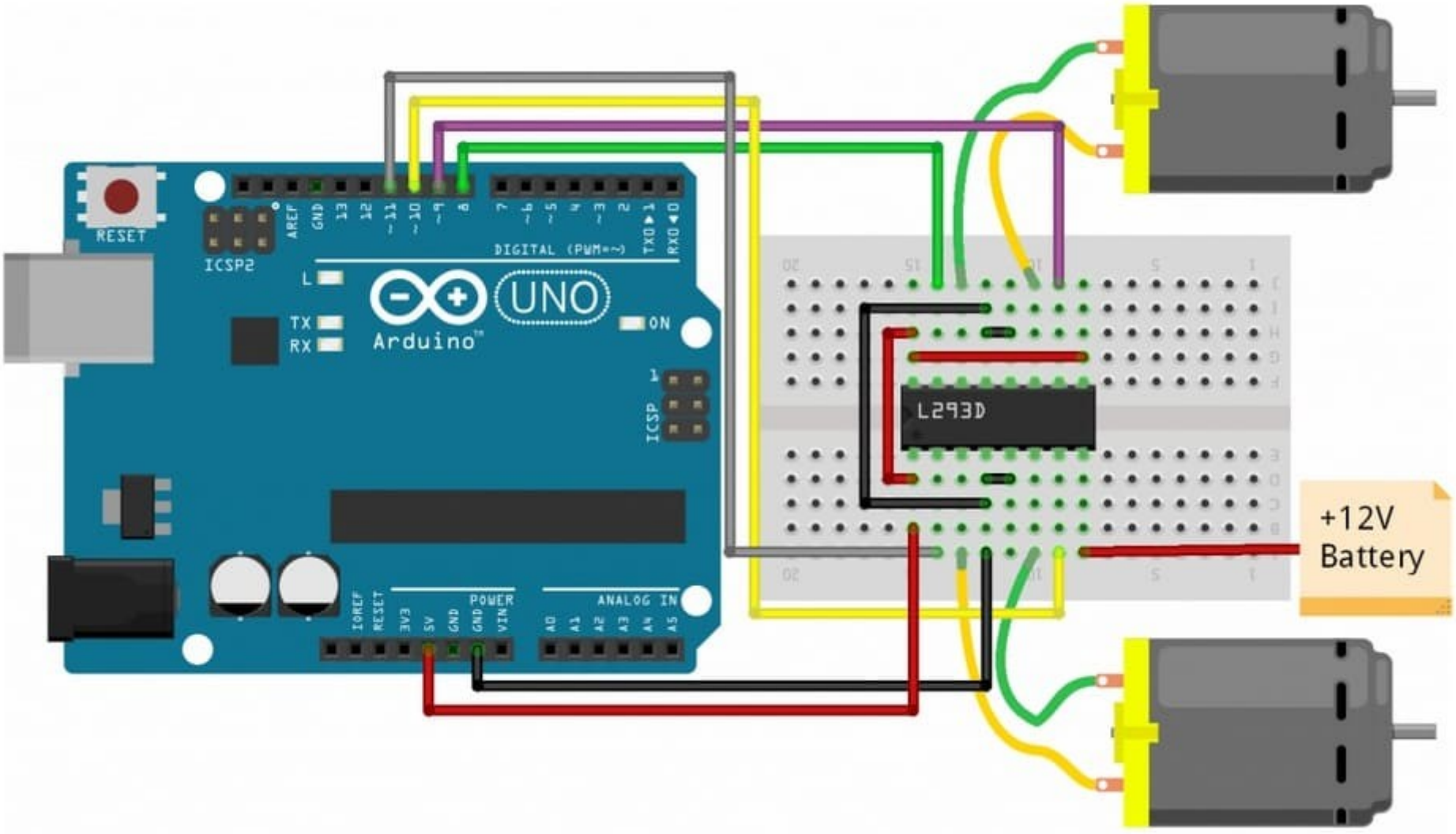

void setup()
  {
      for (int i = 8 ; i<11 ; i++)                  // Inicializamos los pines
      pinMode( i, OUTPUT);
  }
void loop()
  {   digitalWrite(E1, HIGH);     // Activamos Motor1
      digitalWrite(I1, HIGH);     // Arrancamos
      digitalWrite(I2, LOW);
      delay(3000);

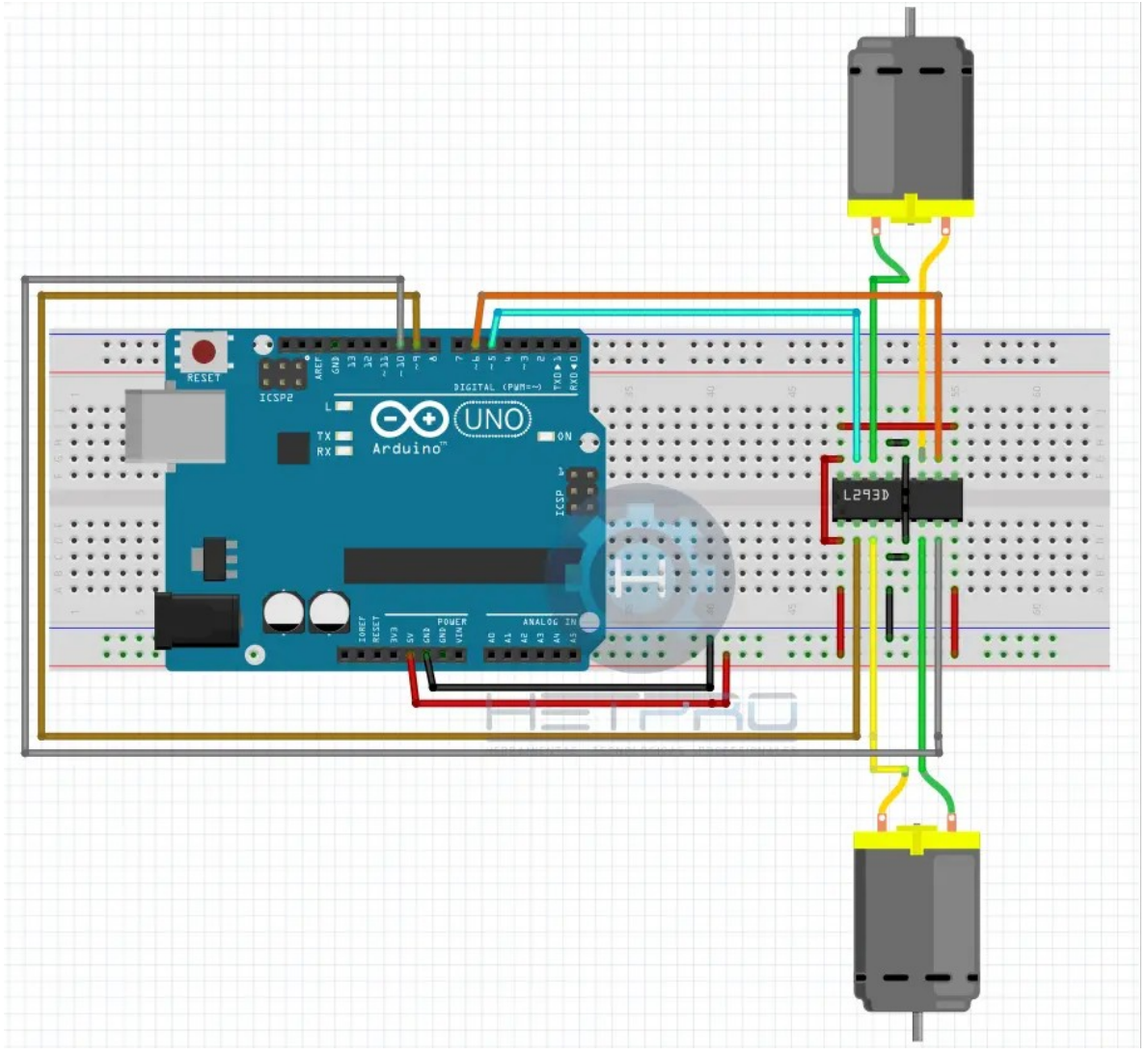

      digitalWrite(E1, LOW);      // Paramos Motor 1
      delay(1000);
      digitalWrite(E1, HIGH);     // Activamos Motor1


      digitalWrite(I1, LOW);      // Arrancamos con cambio de direccion
      digitalWrite(I2, HIGH);
      delay(3000);


      digitalWrite(E1, LOW);      // Paramos Motor 1
      delay(1000);
 }
```

# motor PWM


RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM=~)
L
TX
RX
Arduino
UNO
ON
ICSP
POWER
ANALOG IN
IOREF
RESET
3V3
5V
GND
GND
VIN
A0
A1
A2
A3
A4
A5
L293D
+12V
Battery


RESET
ICSP2
UNO
Arduino
TX
RX
ON
DIGITAL (PWM=~)
POWER
ANALOG IN
L293D

```
//Configuración de los motores.
//Motor 1
const int motorAPin1  = 5;  // Pin 14 de L293
const int motorAPin2  = 6;  // Pin 10 de L293
//Motor 2
const int motorBPin3  = 10; // Pin  7 de L293
const int motorBPin4  = 9;  // Pin  2 de L293


void setup(){
    pinMode(motorAPin1, OUTPUT);
    pinMode(motorAPin2, OUTPUT);
    pinMode(motorBPin3, OUTPUT);
    pinMode(motorBPin4, OUTPUT)
}



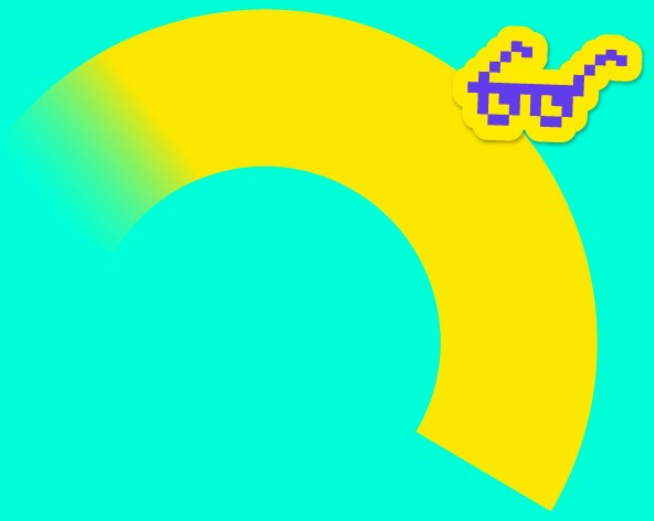
void loop(){
    digitalWrite(motorAPin1, HIGH); // Al activar gira el motor A en sentido de las agujas del reloj.
    digitalWrite(motorAPin2, LOW); // Al activar gira el motor A en sentido contra las agujas del reloj.
    digitalWrite(motorBPin3, HIGH); // Al activar gira el motor B en sentido de las agujas del reloj.
    digitalWrite(motorBPin4, LOW); // Al activar gira el motor B en sentido contra las agujas del reloj.



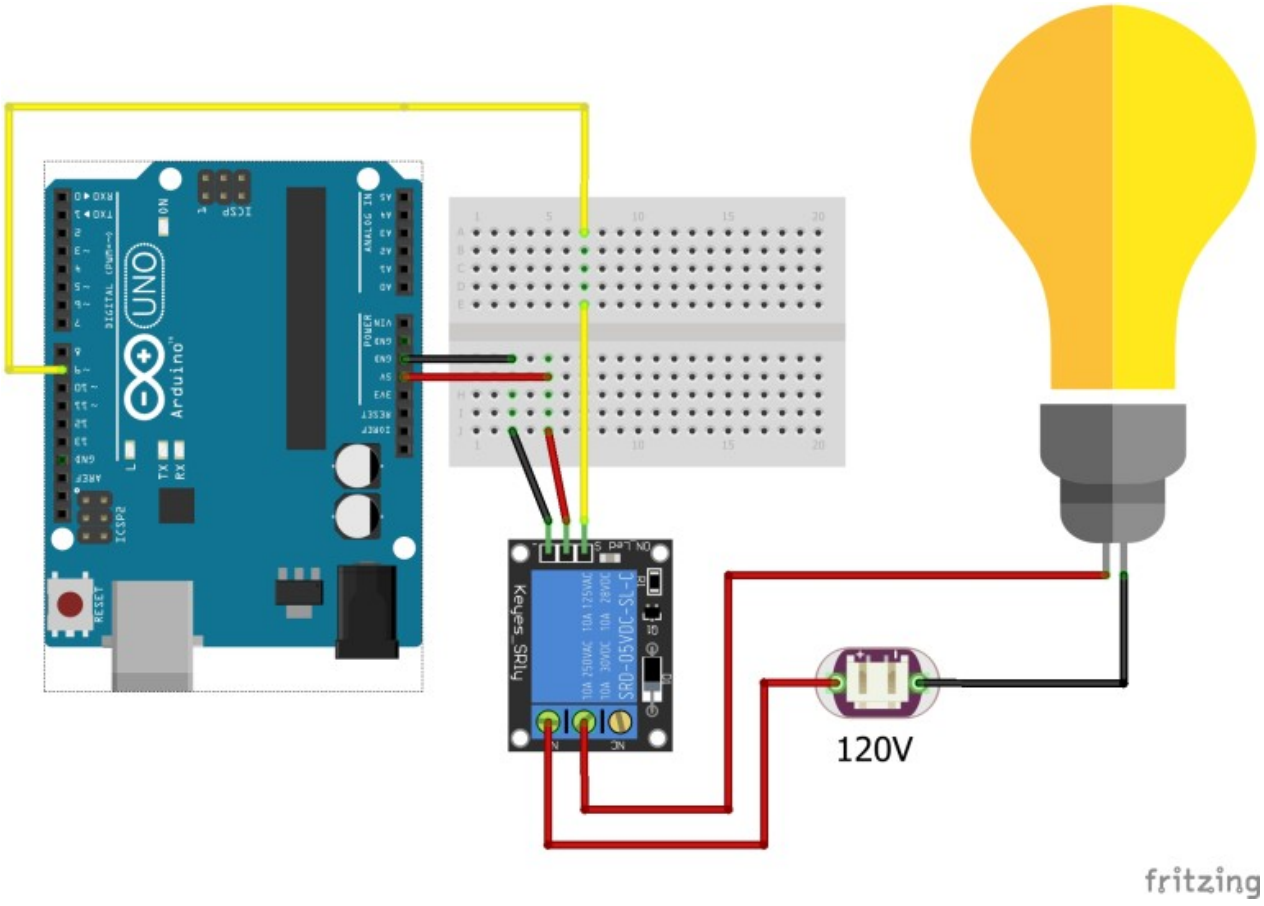
  while(1){} // Esta parte del codigo inicia un bucle inifinito.

}
```

# Bombillo con Arduino a 110 V



# Encender un bombillo de 110V usando un relé



```
// Práctica activar un relé
const int relePin=9;
void setup()
{
pinMode(LED,OUTPUT);
}
void loop()
{
digitalWrite(relePin,HIGH)
;
}
```