//Code Referenced:

https://lastminuteengineers.com/l298n-dc-stepper-driver-arduino-tutorial/

//Modified by Mario Cuaya

// Motor A connections

int enA = 6; //Controls motor A speed

int in1 = 13; //Motor A Forward

int in2 = 12; //Motor B Backwards

// Motor B connections

int enB = 5; //Controls motor B speed

int in3 = 11; //Motor B Forward

int in4 = 10; //Motor B Backwards

void setup() {

// Set all the motor control pins to outputs

pinMode(enA, OUTPUT);

pinMode(enB, OUTPUT);

pinMode(in1, OUTPUT);

pinMode(in2, OUTPUT);

pinMode(in3, OUTPUT);

pinMode(in4, OUTPUT);

// Turn off motors - Initial state

digitalWrite(in1, LOW);

digitalWrite(in2, LOW);

digitalWrite(in3, LOW);

digitalWrite(in4, LOW);

}

void loop() {

directionControl();

delay(1000);

speedControl();

delay(1000);

}

// This function lets you control spinning direction of motors

void directionControl() {

// Set motors to maximum speed

// For PWM maximum possible values are 0 to 255

analogWrite(enA, 255);

analogWrite(enB, 255);

// Turn on motor A & B

digitalWrite(in1, HIGH); //Forward

digitalWrite(in2, LOW);

digitalWrite(in3, HIGH); //Forward

digitalWrite(in4, LOW);

delay(2000);

// Now change motor directions

digitalWrite(in1, LOW);

digitalWrite(in2, HIGH); //Forwards

digitalWrite(in3, LOW);

digitalWrite(in4, HIGH); //Backwards

delay(2000);

// Turn off motors

digitalWrite(in1, LOW);

digitalWrite(in2, LOW);

digitalWrite(in3, LOW);

digitalWrite(in4, LOW);

}

// This function lets you control speed of the motors

void speedControl() {

// Turn on motors

digitalWrite(in1, LOW);

digitalWrite(in2, HIGH);

digitalWrite(in3, LOW);

digitalWrite(in4, HIGH);

// Accelerate from zero to maximum speed

for (int i = 0; i < 256; i++) {

analogWrite(enA, i);

analogWrite(enB, i);

delay(20);

}

// Decelerate from maximum speed to zero

for (int i = 255; i >= 0; --i) {

analogWrite(enA, i);

analogWrite(enB, i);

delay(20);

}

// Now turn off motors

digitalWrite(in1, LOW);

digitalWrite(in2, LOW);

digitalWrite(in3, LOW);

digitalWrite(in4, LOW);

}