Internet Of Things

Displays and Actuators

Show time!

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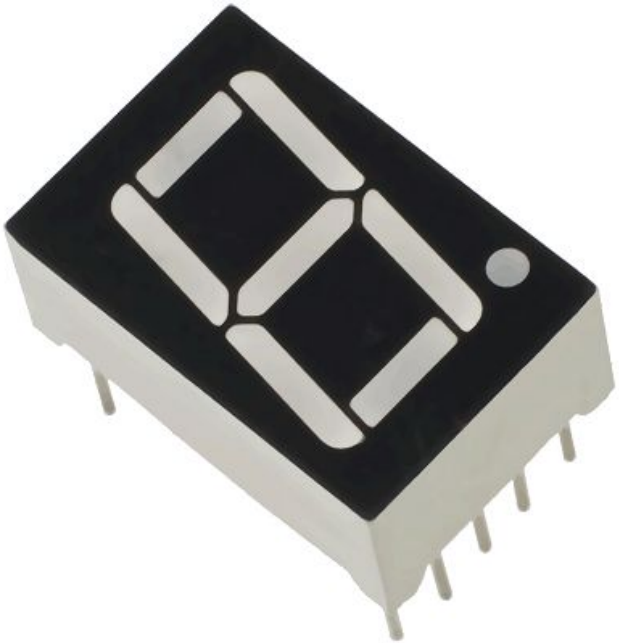
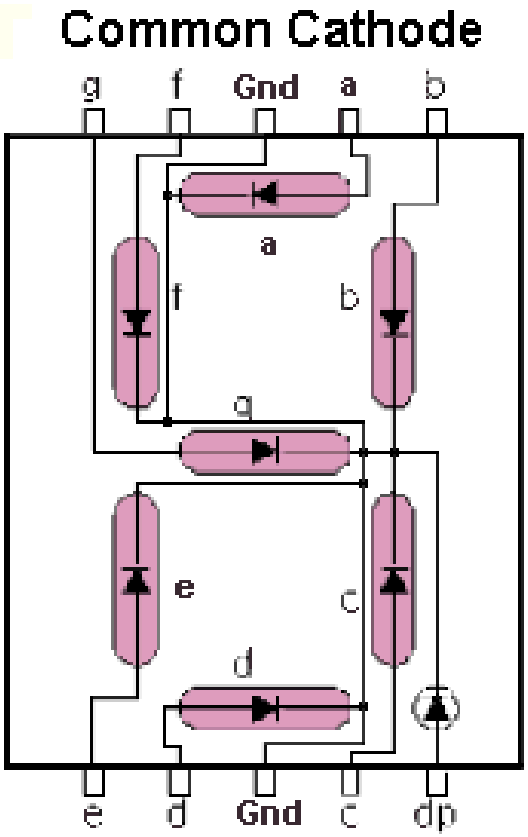
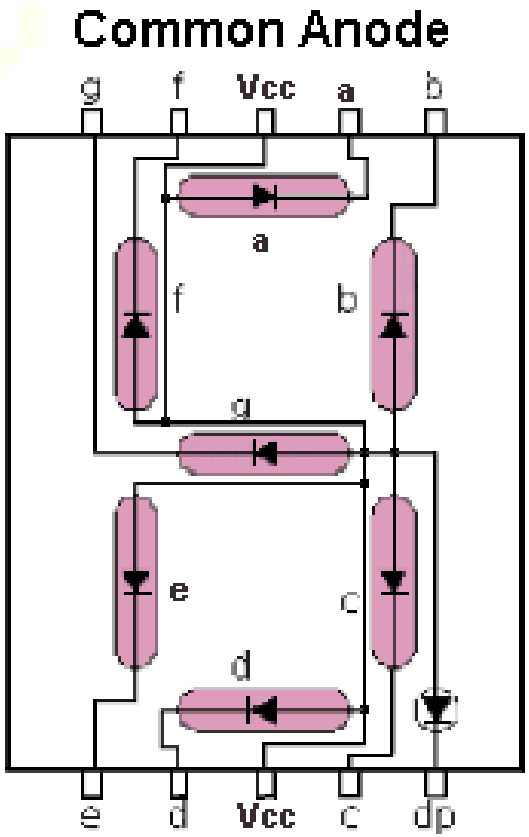
7 Segment







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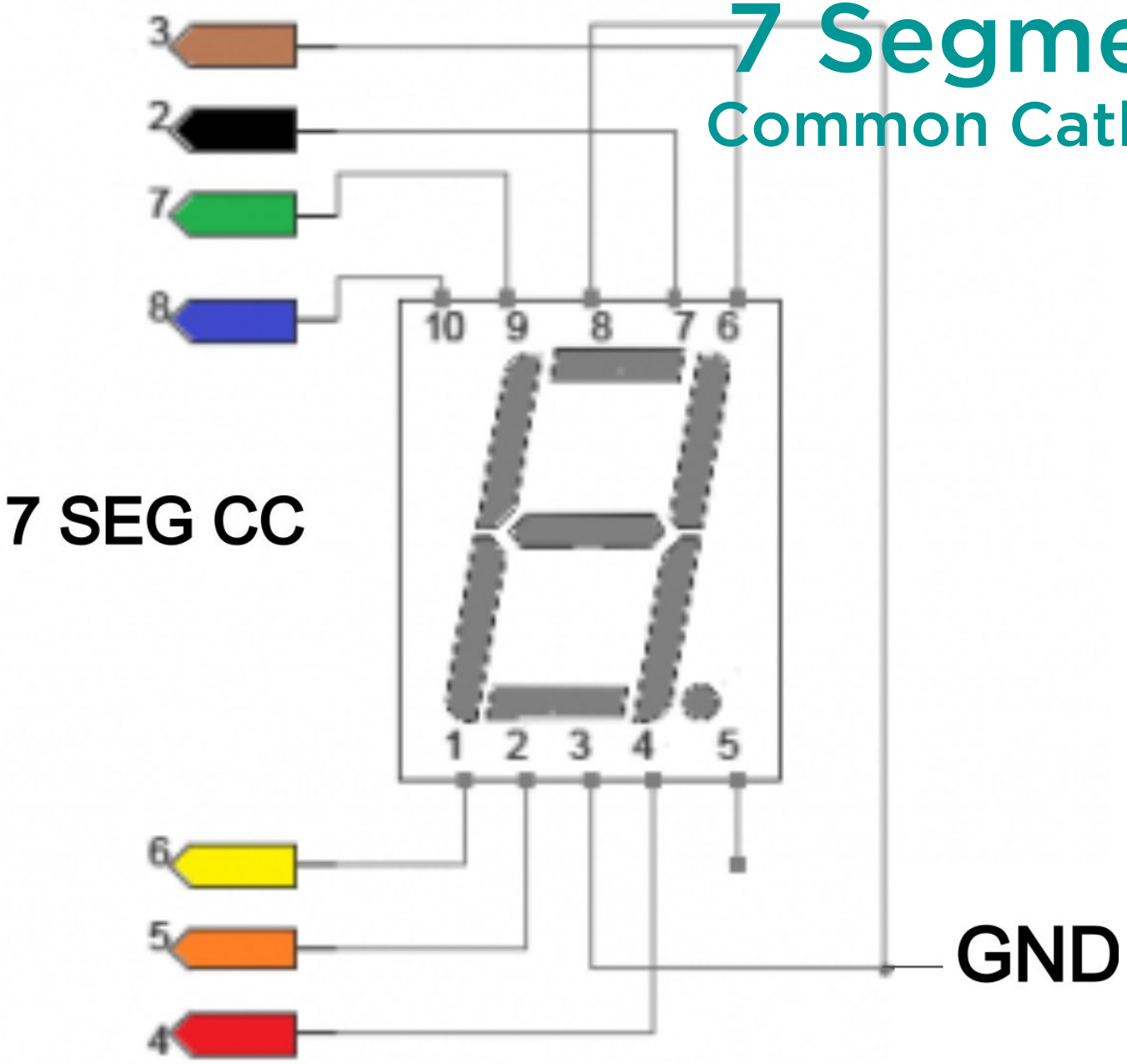
7 Segment
Common Cathode



7 Segment
Common Cathode

```
void setup() {
  pinMode(2,OUTPUT);
  pinMode(3,OUTPUT);
  pinMode(4,OUTPUT);
  pinMode(5,OUTPUT);
  pinMode(6,OUTPUT);
  pinMode(7,OUTPUT);
  pinMode(8,OUTPUT);
  digitalWrite(2,HIGH); delay(1000);
  digitalWrite(3,HIGH); delay(1000);
  digitalWrite(4,HIGH); delay(1000);
  digitalWrite(5,HIGH); delay(1000);
  digitalWrite(6,HIGH); delay(1000);
  digitalWrite(7,HIGH); delay(1000);
  digitalWrite(8,HIGH); delay(1000);}

void loop() {}
```

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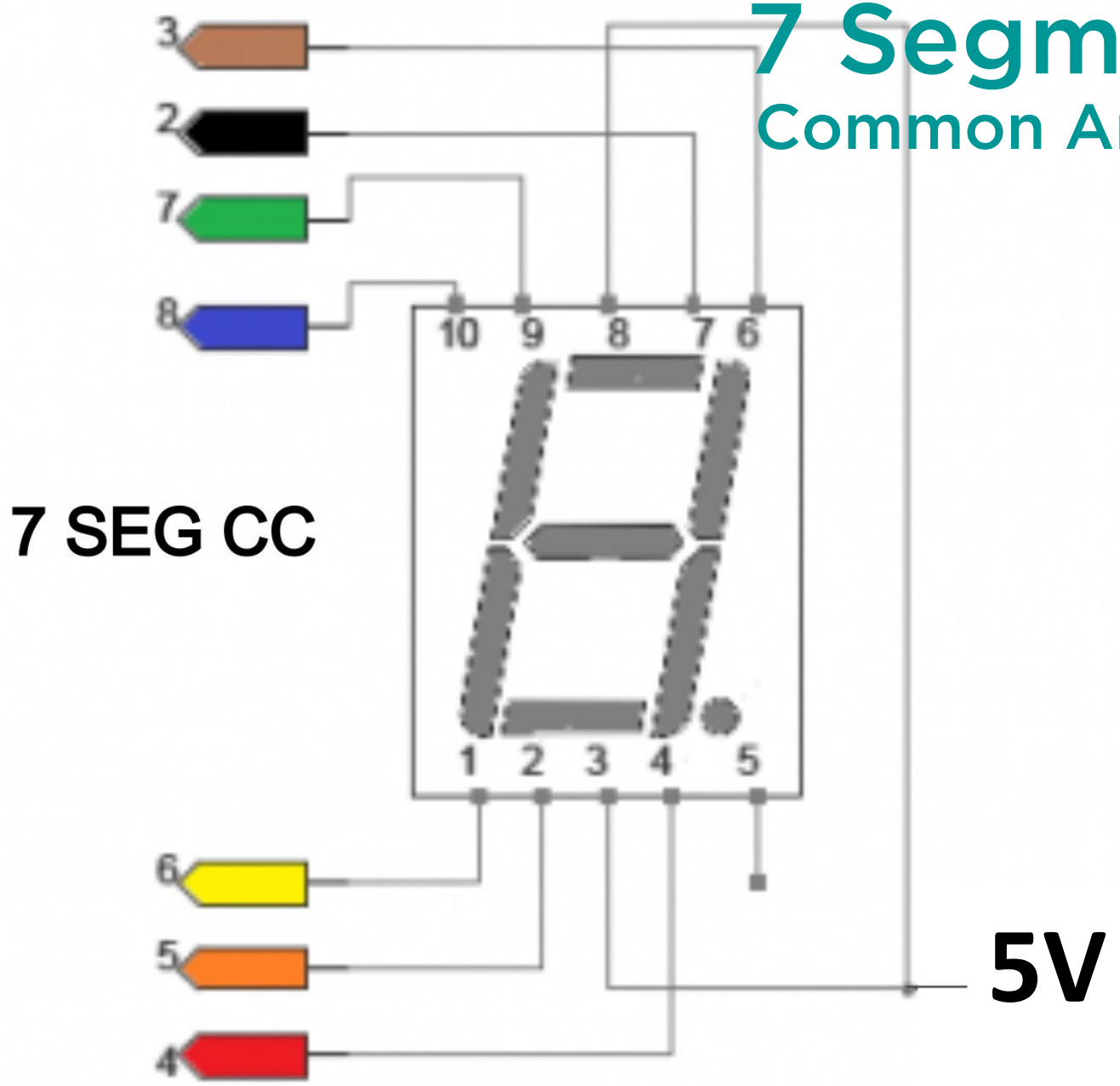
7 Segment
Common Anode



7 Segment
Common Anode

```
void setup() {
  pinMode(2,OUTPUT);
  pinMode(3,OUTPUT);
  pinMode(4,OUTPUT);
  pinMode(5,OUTPUT);
  pinMode(6,OUTPUT);
  pinMode(7,OUTPUT);
  pinMode(8,OUTPUT);
  digitalWrite(2,LOW); delay(1000);
  digitalWrite(3,LOW); delay(1000);
  digitalWrite(4,LOW); delay(1000);
  digitalWrite(5,LOW); delay(1000);
  digitalWrite(6,LOW); delay(1000);
  digitalWrite(7,LOW); delay(1000);
  digitalWrite(8,LOW); delay(1000);}

void loop() {}
```

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Count up 1 to 9!

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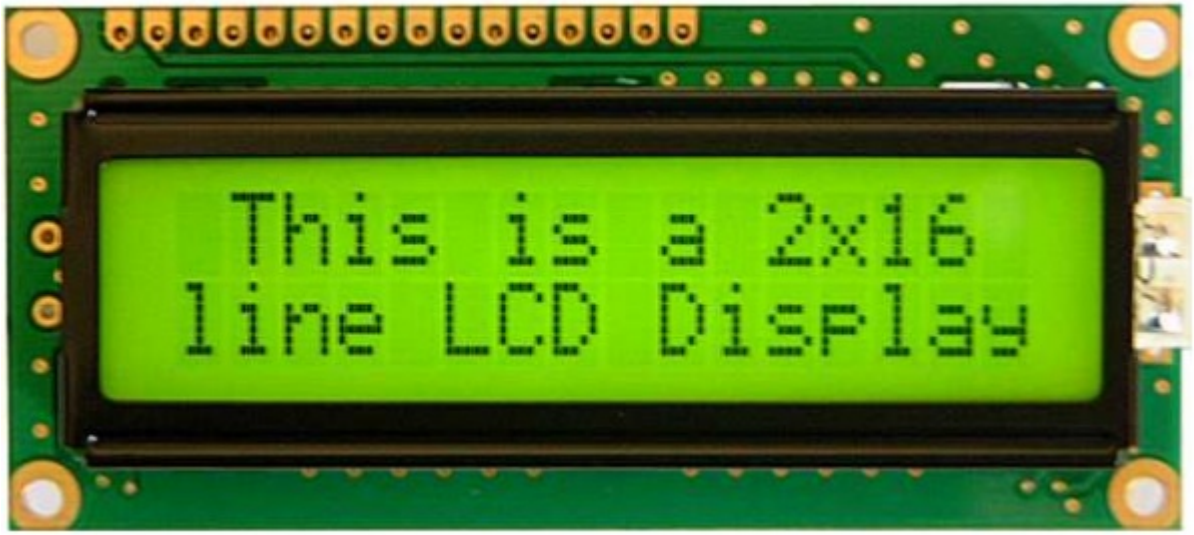
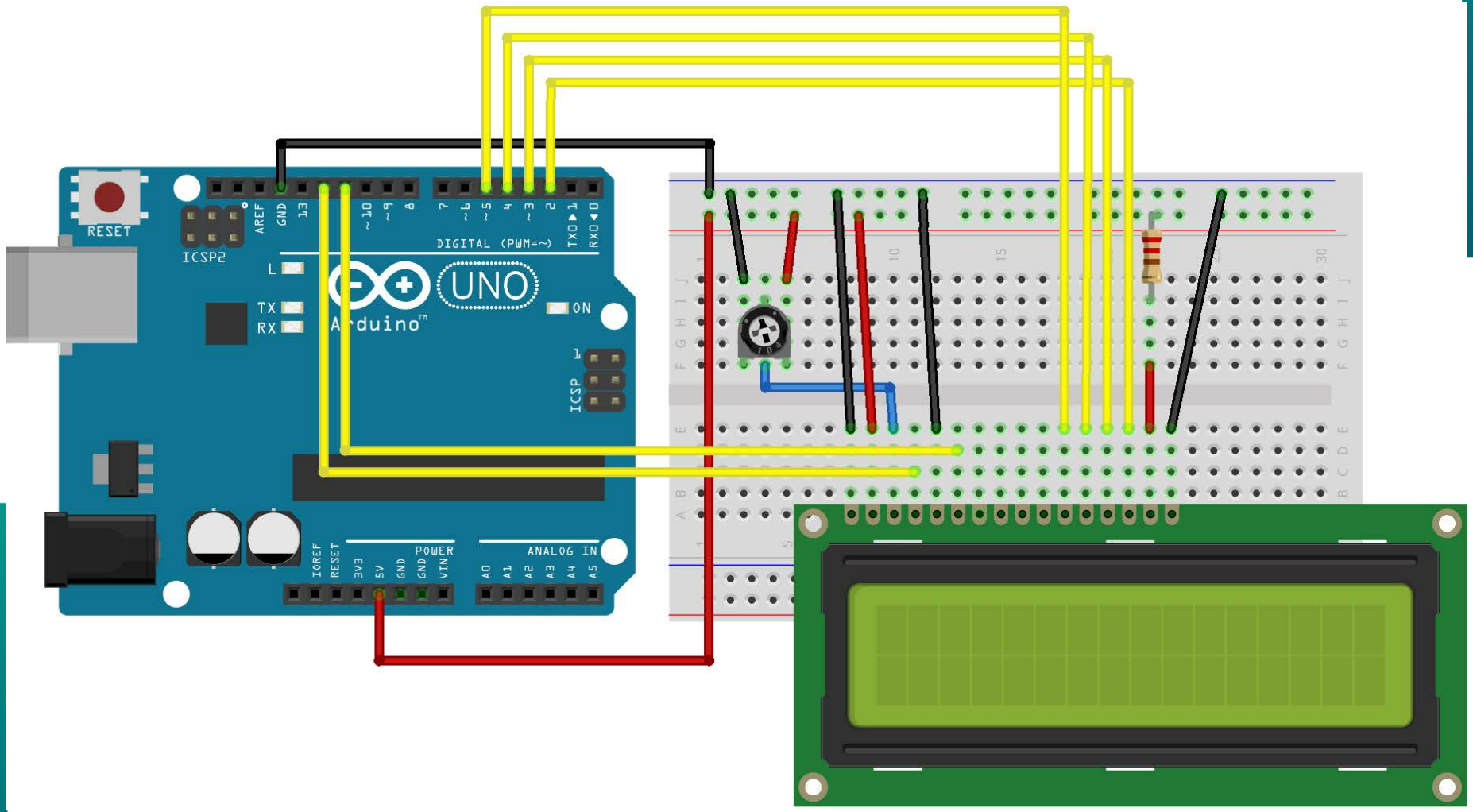
LCD Liquid crystal display



LCD Liquid crystal display



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LCD Liquid crystal display

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

void setup() {
  lcd.begin(16, 2);
  lcd.print(“Purwadhika IoT");}

void loop() {
  lcd.setCursor(0, 1);
  // kolom 0, baris 1
  lcd.print(“Detik: ");
  lcd.print(millis() / 1000);}
```

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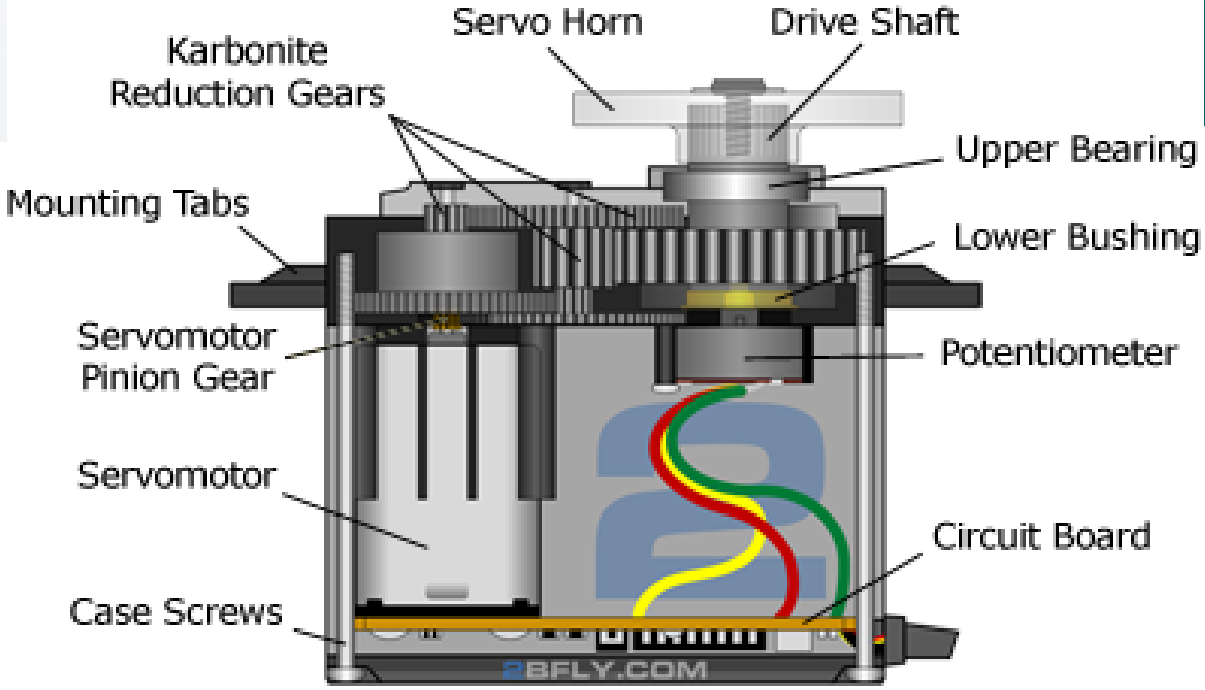
Servo Motor



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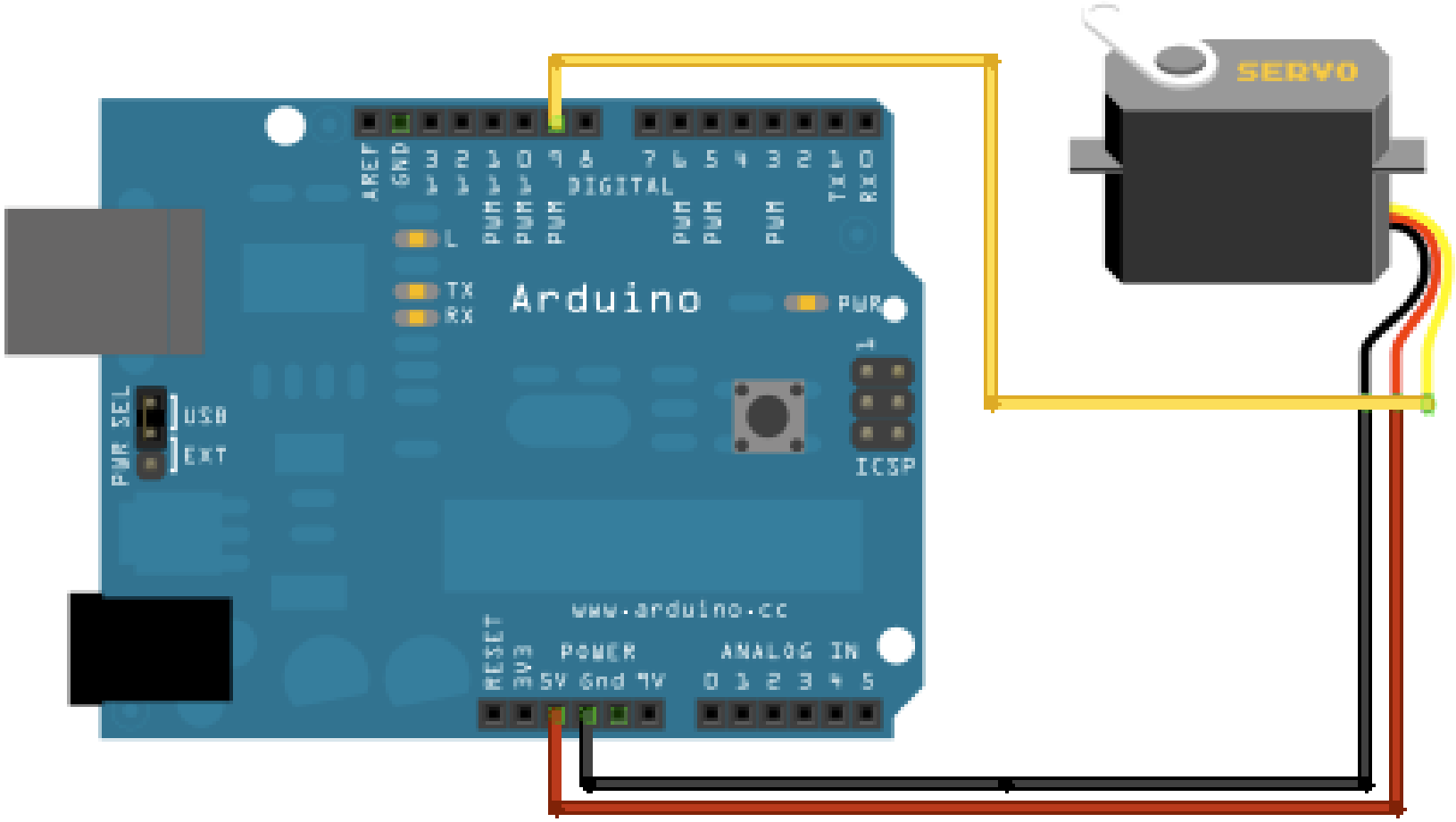
Servo Motor



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Servo Motor

```
#include <Servo.h>
Servo myservo;

void setup(){
  myservo.attach(9);}

void loop() {
  myservo.write(0);
  delay(1000);
  myservo.write(180);
  delay(1000);}
```

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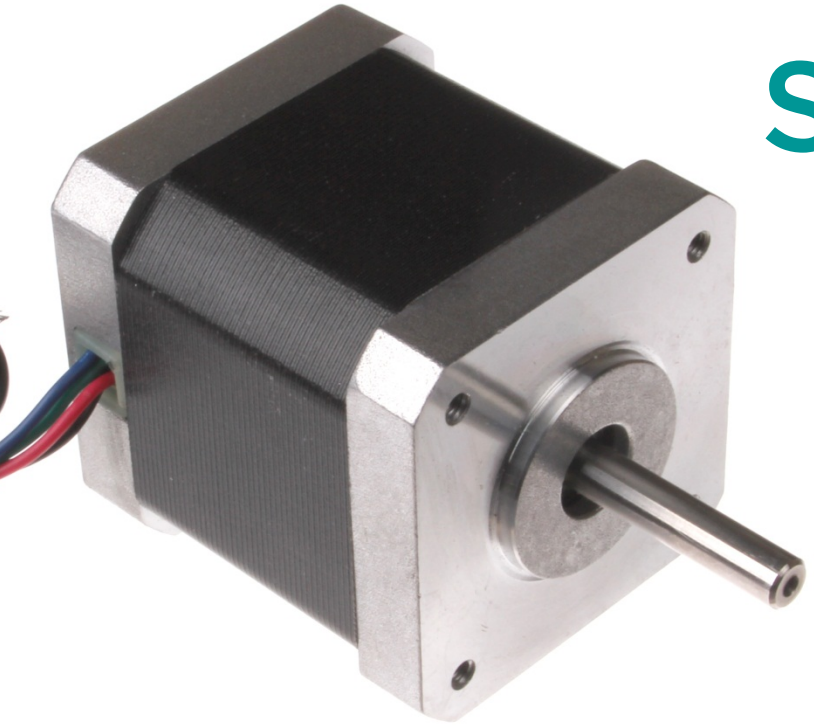
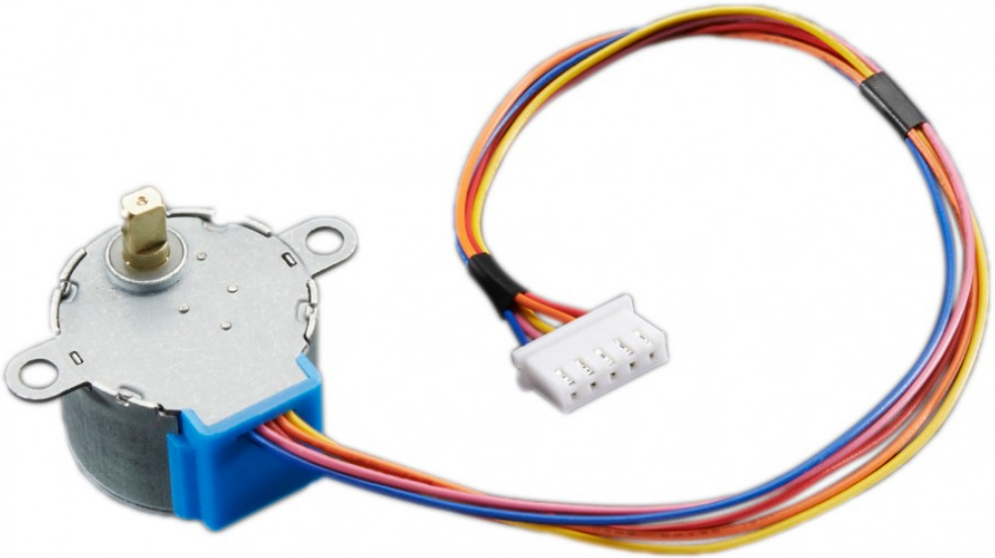
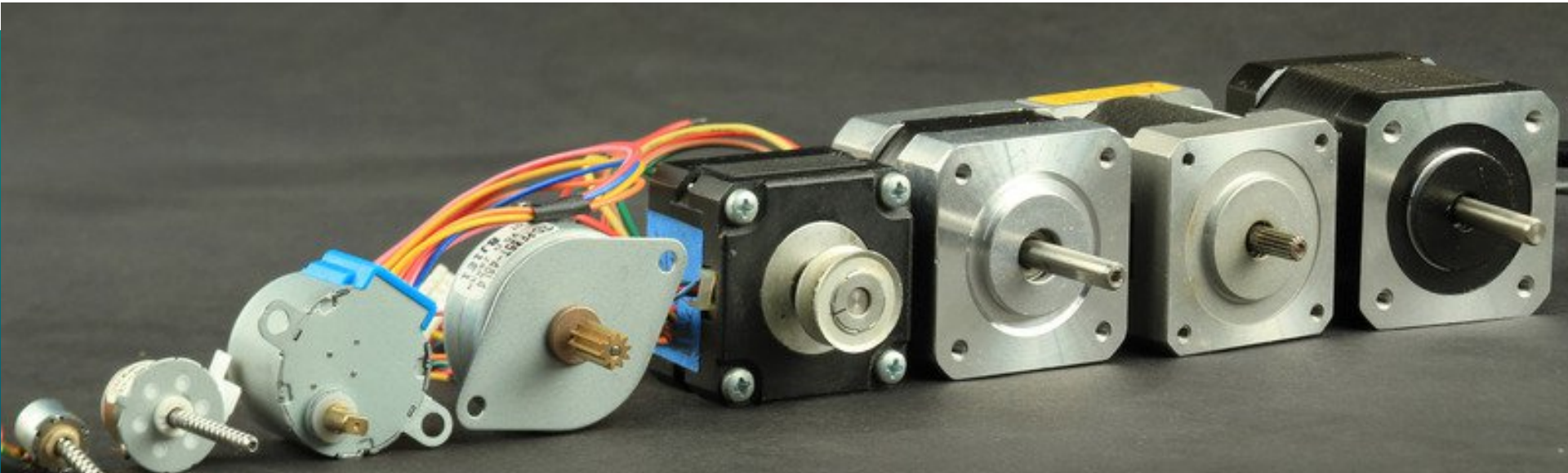
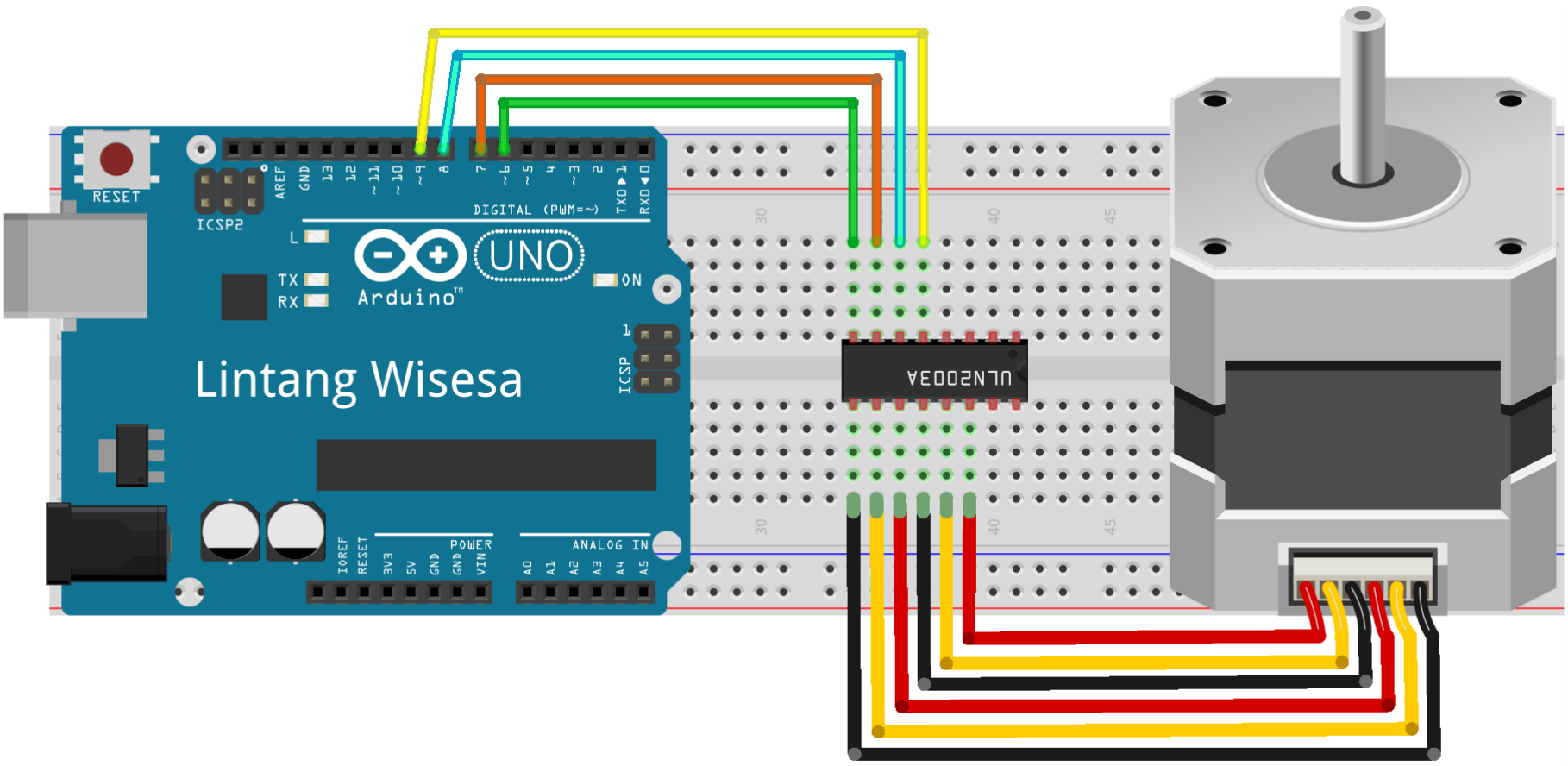
Stepper Motor







Stepper Motor



fritzing

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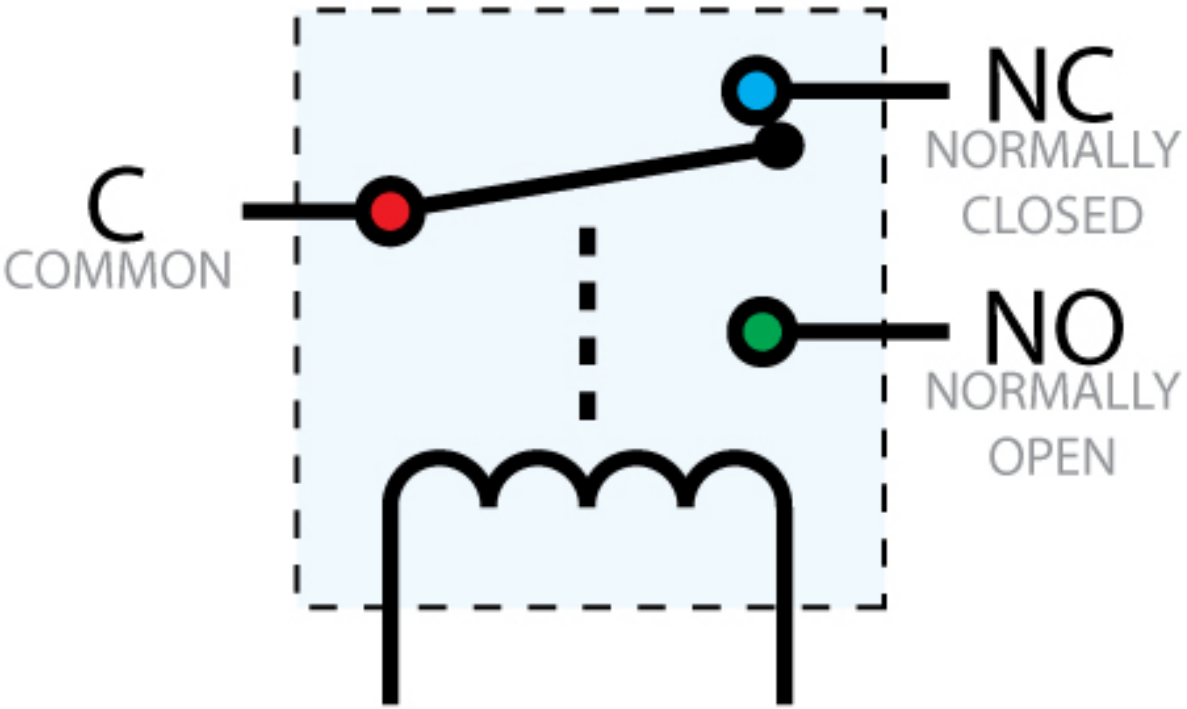
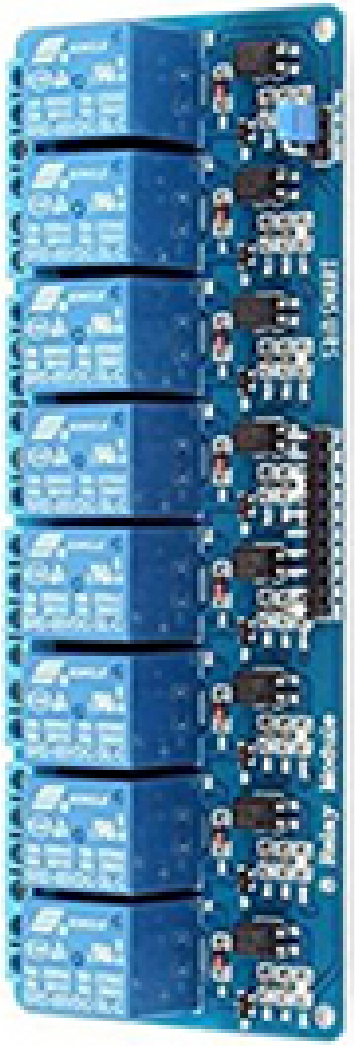
Stepper Motor

```
#include <AccelStepper.h>
#define HALFSTEP 8
#define motorPin1  6     // IN1 pada ULN2003 driver
#define motorPin2  7     // IN2 pada ULN2003 driver
#define motorPin3  8     // IN3 pada ULN2003 driver
#define motorPin4  9     // IN4 pada ULN2003 driver
AccelStepper  stepper1(HALFSTEP,  motorPin1,  motorPin3,
motorPin2, motorPin4);

void setup() {
  stepper1.setMaxSpeed(1000.0);
  stepper1.setAcceleration(100.0);
  stepper1.setSpeed(200);
  stepper1.moveTo(3000);}

void loop() {
  if (stepper1.distanceToGo() == 0) {
    stepper1.moveTo(-stepper1.currentPosition());}
  stepper1.run();}
```

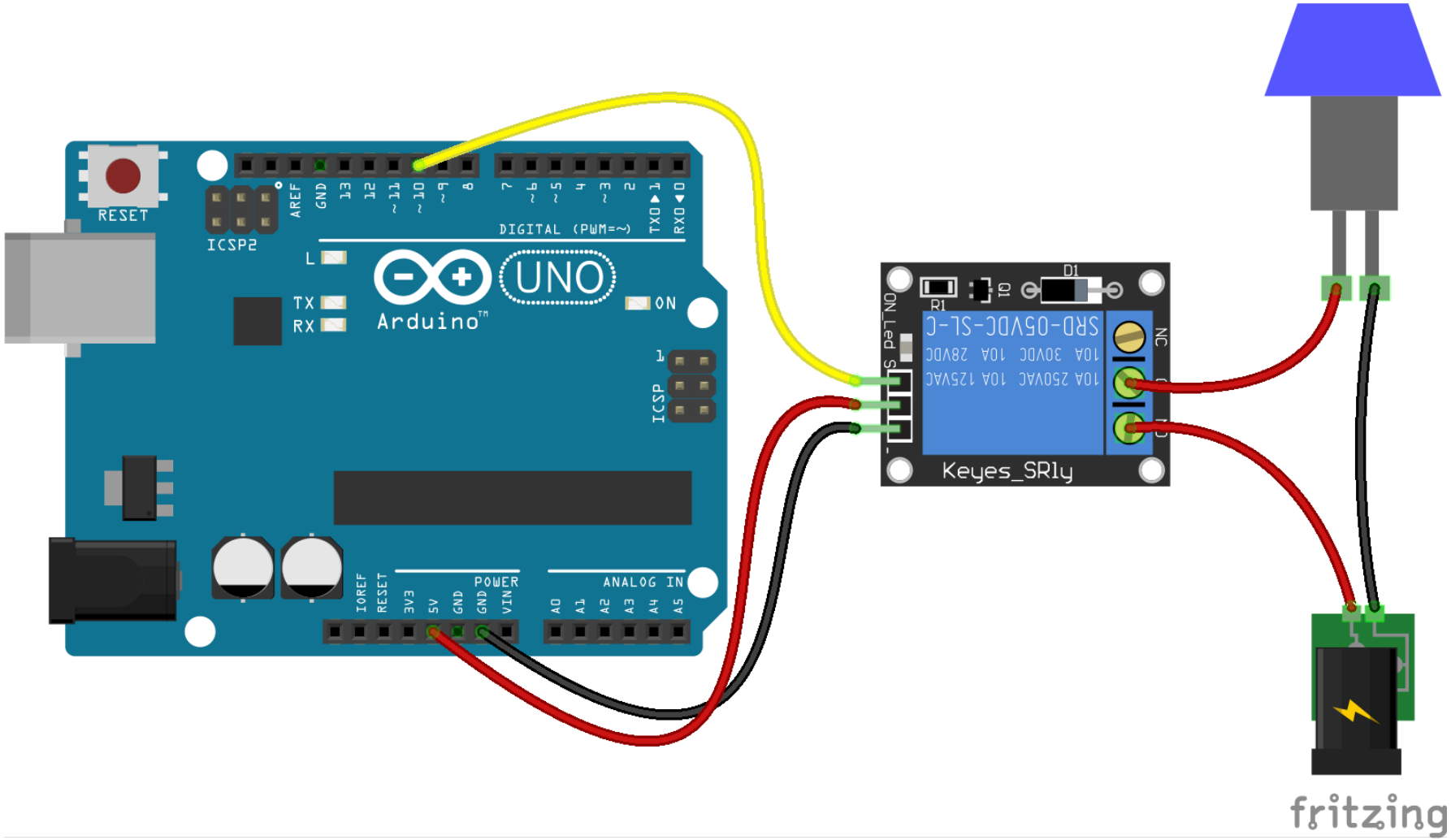
Relay

SONGLE
10A 250VAC 10A 125VAC
10A 30VDC 10A 28VDC
SRD-05VDC-SL-C


NC
NORMALLY
CLOSED
C
COMMON
NO
NORMALLY
OPEN



Relay



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Relay

```
void setup(){
  pinMode(10, OUTPUT);
}

void loop(){
  digitalWrite(10, HIGH);
  delay(5000);
  digitalWrite(10, LOW);
  delay(5000);
}
```

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