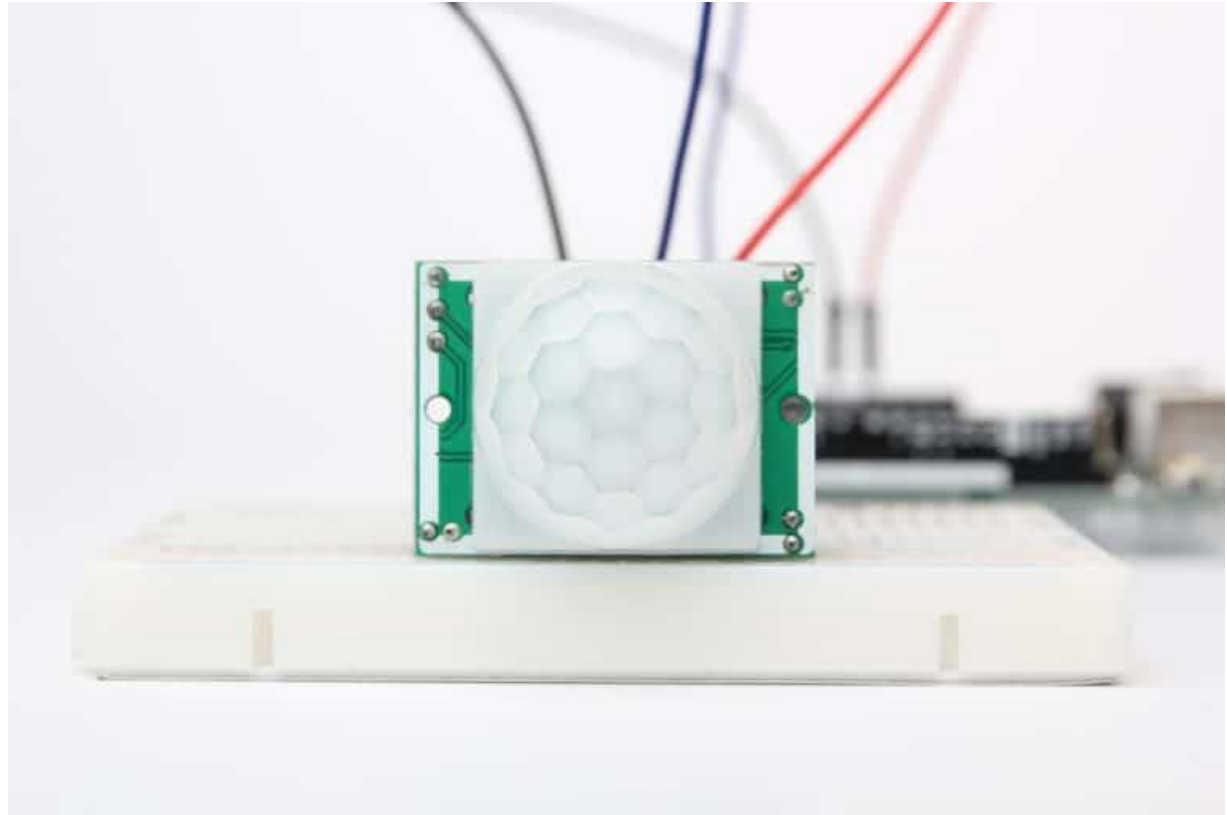


# MOTION SENSOR

---



# HC-SR501 PIR MOTION SENSOR

- វាគឺឧបករណ៍មួយដែលប្រើប្រាស់ sensor សំរាប់ពិនិត្យ(detect) ទៅលើការរំកិល(ចលនា)របស់មនុស្ស ឬវត្ថុអ្វីមួយ។
- វាដំណើរការដោយប្រើមុំ ១១០ដឺក្រេ ដែលយើងអាចកំណត់កំរិតនៃចលនាបាន។
- យើងអាចប្រើវា សម្រាប់បង្កើតប្រព័ន្ធស្វ័យប្រវត្តិ ដើម្បីសុវត្ថិភាព បញ្ជាភ្លើង ឬសាវ័នជាដើម។
- យើងអាចតភ្ជាប់វា នឹង Arduino board ជាមួយនឹងឧបករណ៍ផ្សេងៗទៀតបាន។



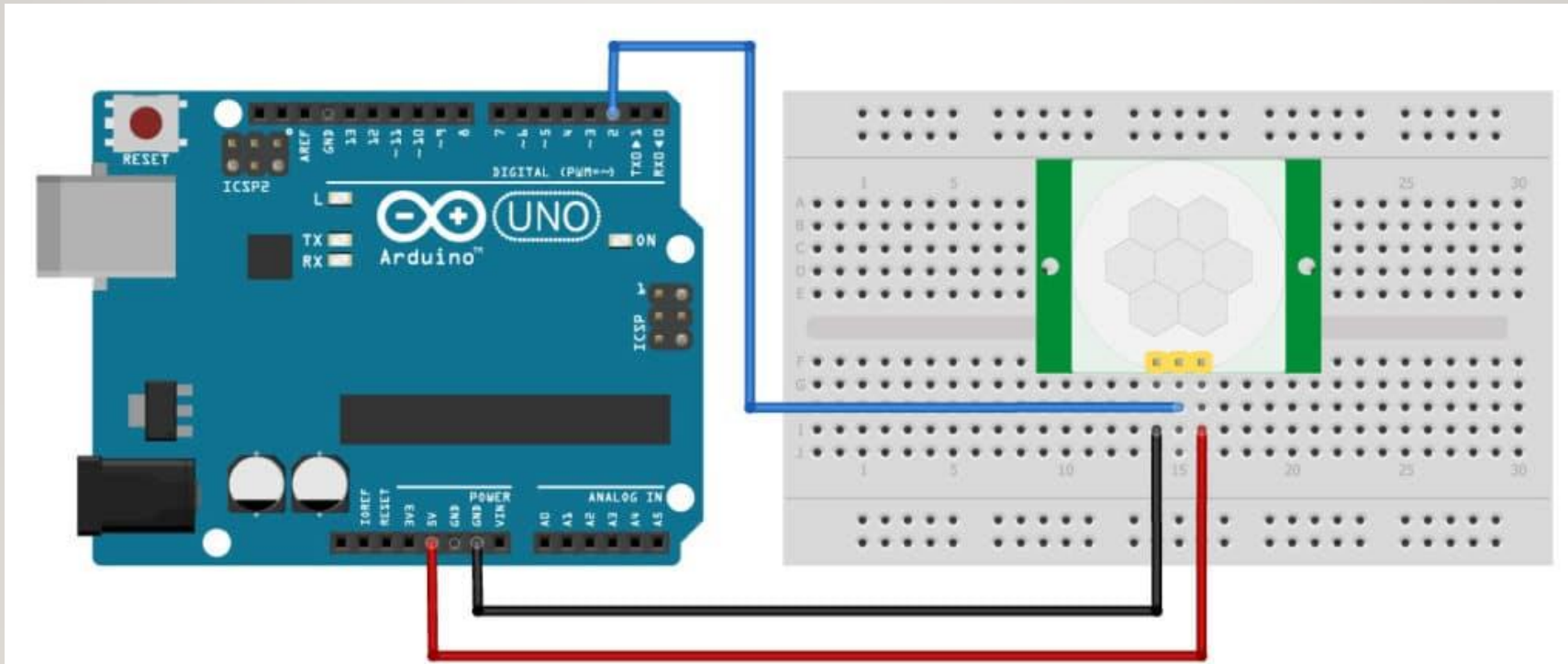
# HARDWARE COMPONENTS

---

- HC-SR501 PIR motion sensor × 1
- Arduino Uno Rev3 × 1
- Jumper wires (male to female) × 10
- Breadboard (optional, makes wiring easier) × 1
- Resistor × 1
- LEDs × 1
- Buzzer × 1
- USB cable type A/B × 1



# HC-SR501 PIR MOTION SENSOR





# HC-SR501 PIR MOTION SENSOR

- យើងប្រើប្រាស់ breadboard និង jumper wire ខ្លះសម្រាប់ភ្ជាប់ឧបករណ៍ទាំងនេះដើម្បីដំណើរការ

HC-SR501 PIR motion sensor	Arduino Connection
VCC	5V
OUT	Pin 2
GND	GND



# HC-SR501 PIR MOTION SENSOR WITH LED

---

```
#define pirPin 2
#define ledPin 13
int val = 0;
bool motionState = false; // We start with no motion detected.
void setup() {
    pinMode(ledPin, OUTPUT);
    pinMode(pirPin, INPUT);
    Serial.begin(9600);
}
```



# HC-SR501 PIR MOTION SENSOR WITH LED

---

```
void loop() {  
    val = digitalRead(pirPin);  
    if (val == HIGH) {  
        digitalWrite(ledPin, HIGH);  
        if (motionState == false) {  
            Serial.println("Motion detected!");  
            motionState = true;  
        }  
    }  
}
```



# HC-SR501 PIR MOTION SENSOR WITH LED

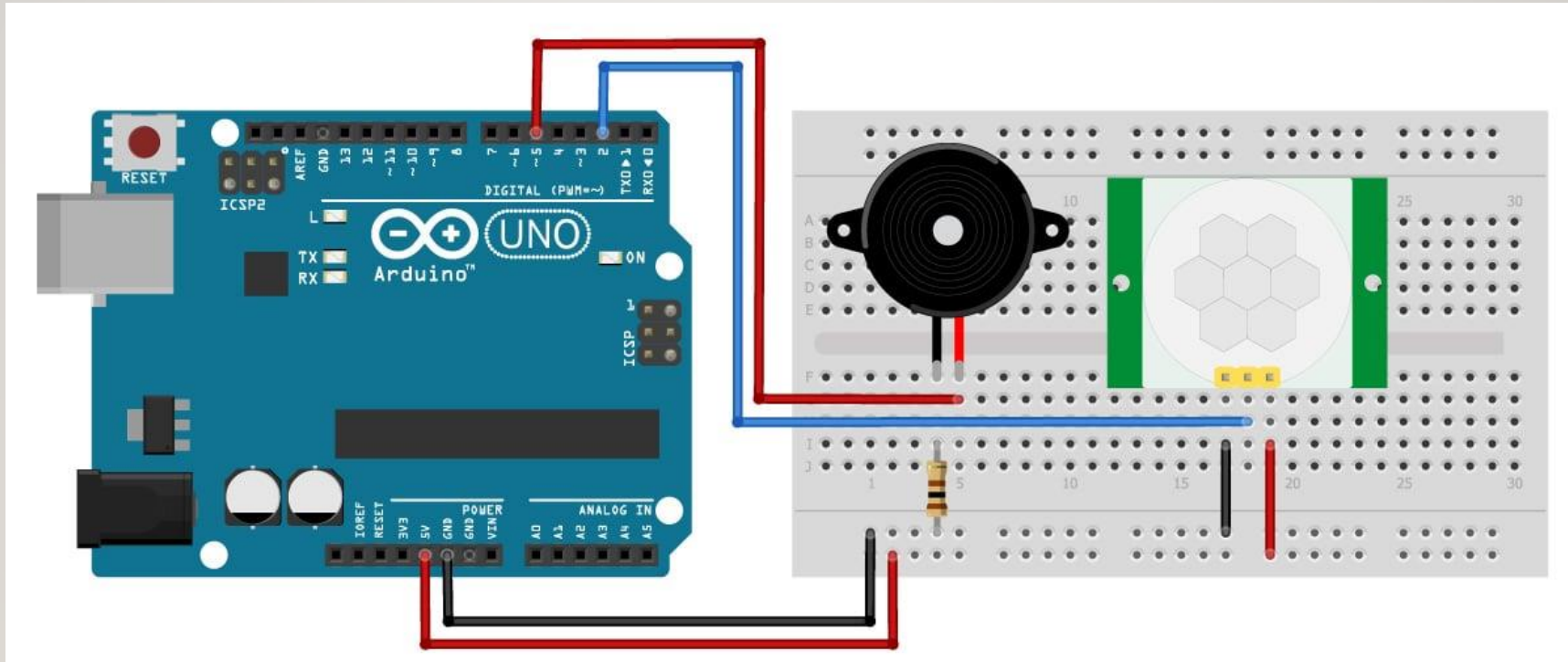
---

```
else {  
    digitalWrite(ledPin, LOW); // Turn off the on-board LED.  
    if (motionState == true) {  
        Serial.println("Motion ended!");  
        motionState = false;  
    }  
}  
}
```





# HC-SR501 PIR MOTION SENSOR WITH BUZZER



# HC-SR501 PIR MOTION SENSOR WITH BUZZER

---

```
#define buzzerPin 5
#define pirPin 2
#define ledPin 13
int val = 0;
bool motionState = false;
void setup() {
    pinMode(buzzerPin, OUTPUT);
    pinMode(ledPin, OUTPUT);
    pinMode(pirPin, INPUT); Serial.begin(9600);
}
```



# HC-SR501 PIR MOTION SENSOR WITH BUZZER

---

```
void loop() {  
    val = digitalRead(pirPin);  
    if (val == HIGH) {  
        digitalWrite(ledPin, HIGH);  
        alarm(500, 1000);  
        delay(150);  
        if (motionState == false) {  
            Serial.println("Motion detected!");  
            motionState = true;  
        }  
    }  
}
```



# HC-SR501 PIR MOTION SENSOR WITH BUZZER

---

```
else {  
    digitalWrite(ledPin, LOW);  
    noTone(buzzerPin);  
    delay(150);  
    if (motionState == true) {  
        Serial.println("Motion ended!");  
        motionState = false;  
    }  
}  
}
```



# HC-SR501 PIR MOTION SENSOR WITH BUZZER

---

```
void alarm(long duration, int freq) {  
    tone(buzzerPin, freq);  
    delay(duration);  
    noTone(buzzerPin);  
}
```

