# Distance Measuring with SR-04 Module

(G Payne – 2016)

The SR-04 module measures distance ultrasonically. It can measure from 2cm to 400cm.

The Trigger sends out a pulse and the Receiver listens to the echo. It then can generate a time duration of the return pulse. You can then derive the distance from the SR-04 to the target using a simple calculation.
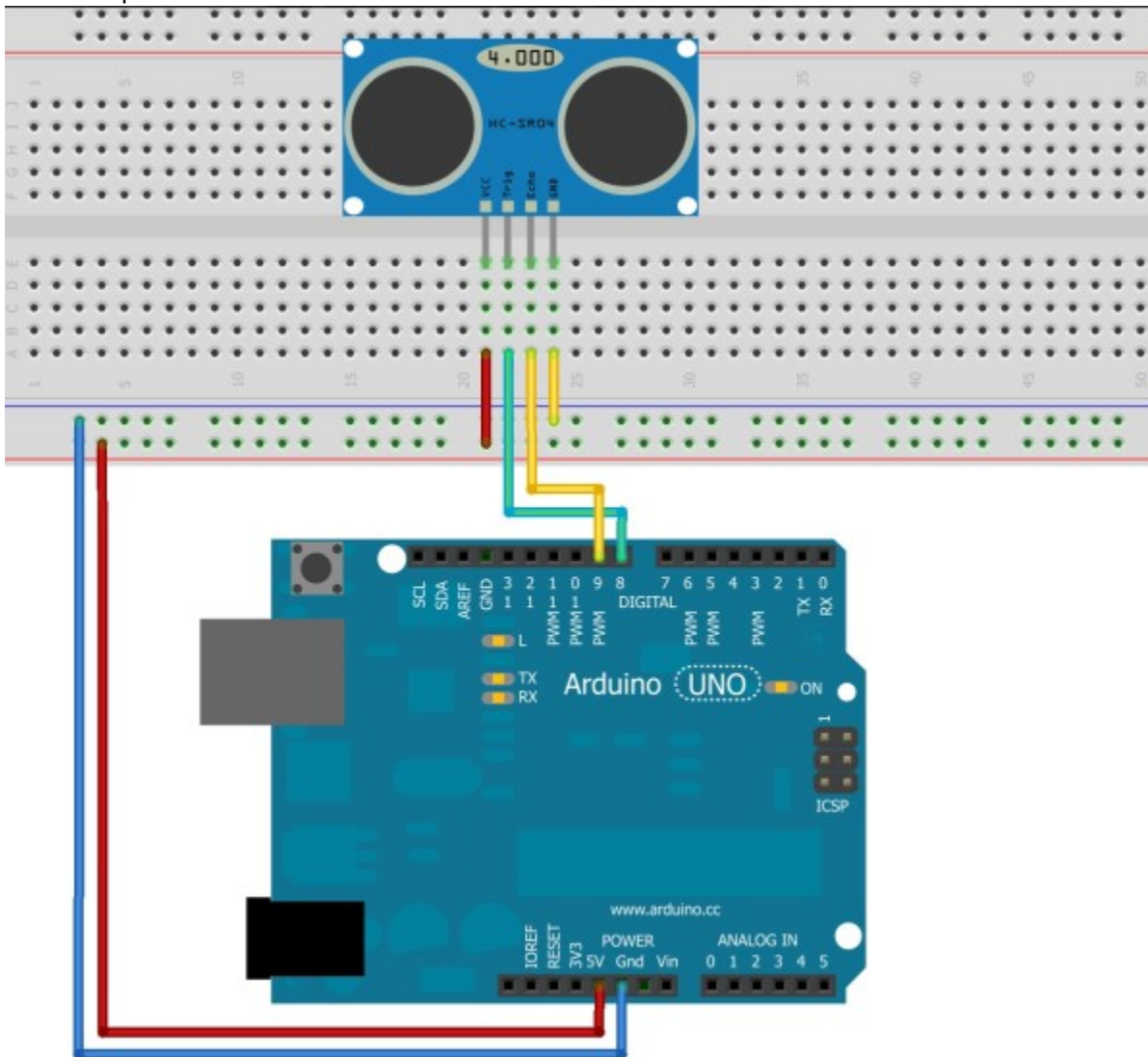
We will make an Arduino Range Detector.

**Parts Needed:**
-Arduino board and breadboard                          -SR-04 Ranger module
-Connecting wires

**Demo:**
Connect up SR-04 on the breadboard and connect it to the Arduino as shown.

Enter the code below and upload it to the Arduino.

```
  int echoPin = 9; // Echo Pin
  int  trigPin = 8; // Trigger Pin

long duration, distance; // Duration used to calculate distance

void setup() {
 Serial.begin (9600);
 pinMode(trigPin, OUTPUT);
 pinMode(echoPin, INPUT);
}

void loop() {
 digitalWrite(trigPin, LOW);
 delayMicroseconds(2);

 digitalWrite(trigPin, HIGH);
 delayMicroseconds(10);

 digitalWrite(trigPin, LOW);
 duration = pulseIn(echoPin, HIGH);

 //Calculate the distance (in cm) based on the speed of sound.
 distance = duration/58.2;

 Serial.println(distance);

 delay(50);
}
```

Now select the Serial Monitor from the Tools menu so you can see how the distance varies from your detector to a target. (your hand, your book, a textbook etc)

**Now go out and MAKE SOMETHING AMAZING!!!!**