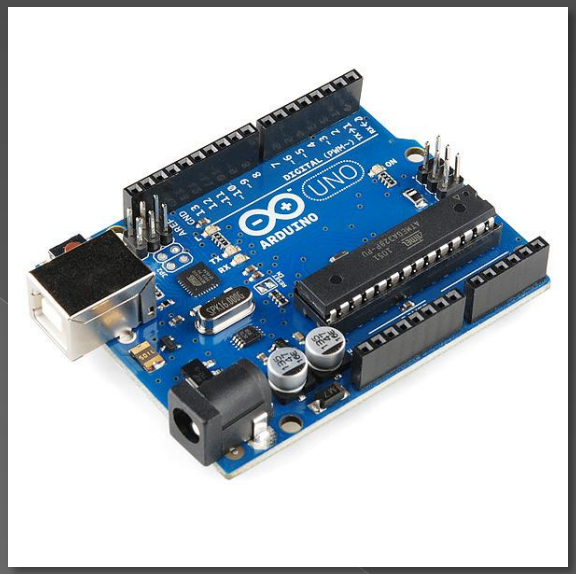
Sensor Data 1

(Temp)

Sensor Data 2

(Light)



Sensor Data 4

(Alarm)

Sensor Data 3

(Motion)

- Light-weight server

- php

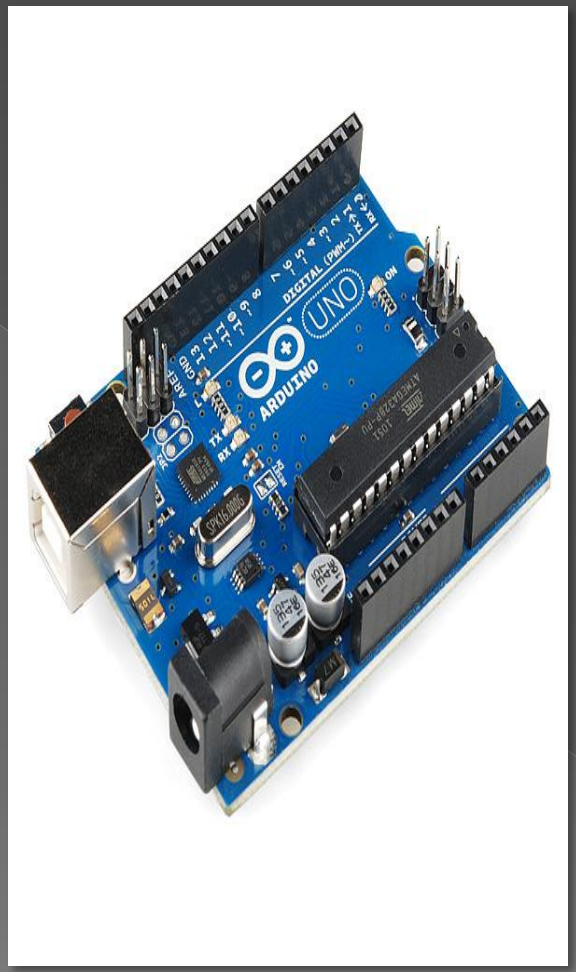
- Data Processing

- Responsive Web App handling

Web Application

- Most recent data
- Data history

Temp

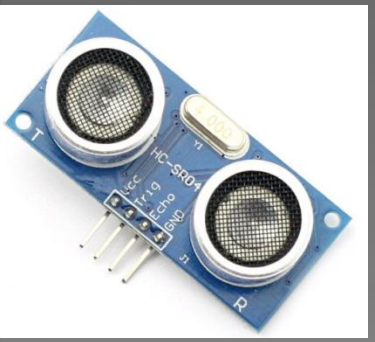


Motor / LED

Turn LEDs of certain rooms on and off through the Raspb Pi or have a Motor operate a task.

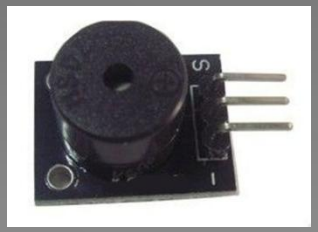
Alarm

Motion

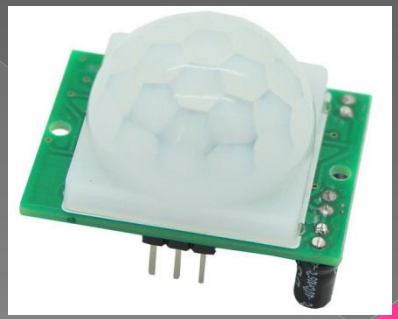


HC-SR04

+



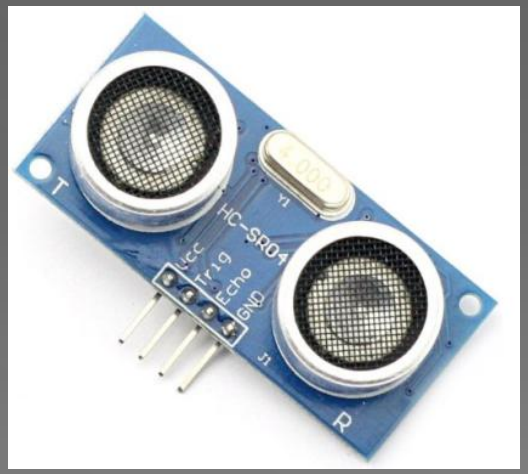
Buzzer

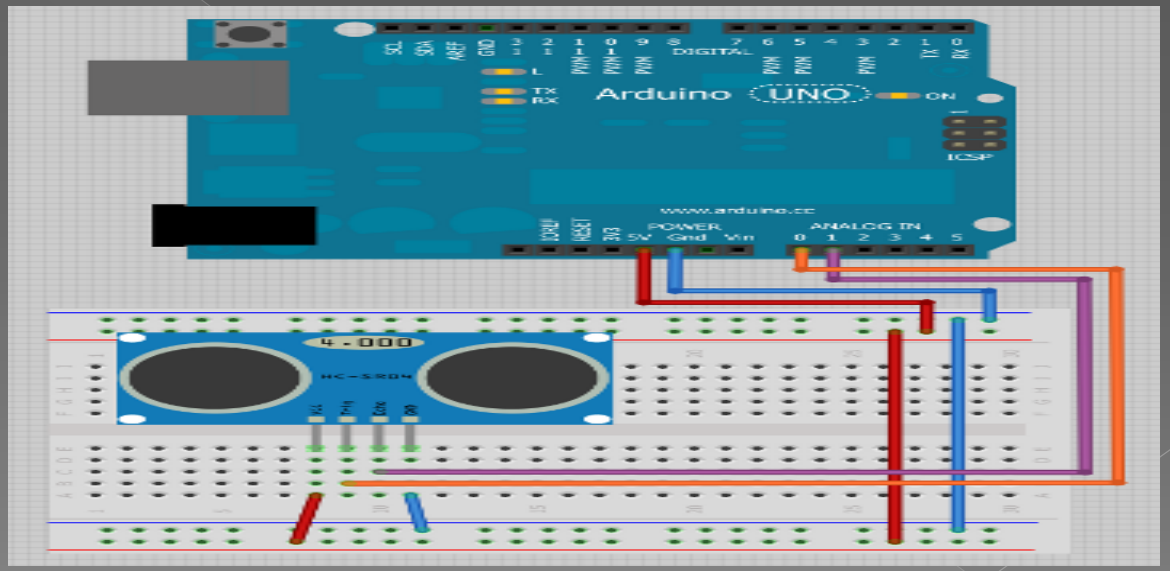


HC-SR501

Alarm Sensor (Distance Sensor)

- Goal : Alarm will go off when a certain pre-defined distance limit is passed.





Distance_Sensor_Program | Arduino 1.0.5

File Edit Sketch Tools Help

Distance_Sensor_Program §

```
#include <NewPing.h>

#define Dis_Pin 14
#define ECHO_PIN     15
#define MAX_DISTANCE 200

NewPing DistanceSensor(Dis_Pin, ECHO_PIN, MAX_DISTANCE);
int LED = 13;

void setup()
{
    Serial.begin(9600);
    pinMode(LED,OUTPUT);
}

void loop()
{
    unsigned int cm = DistanceSensor.ping_cm();  //DISTANCE IN CM
    if ( cm <= 4 )
    {
      digitalWrite(LED, HIGH);  // LED(ALARM) turns on

    }
    else
    {
    digitalWrite(LED, LOW); // LED(ALARM) turns off
    }
    Serial.print("Distance: ");
    Serial.print(cm);
    Serial.println("cm");
    delay(1000);                //gives you the reading of the Distance sensor every sec
}
```

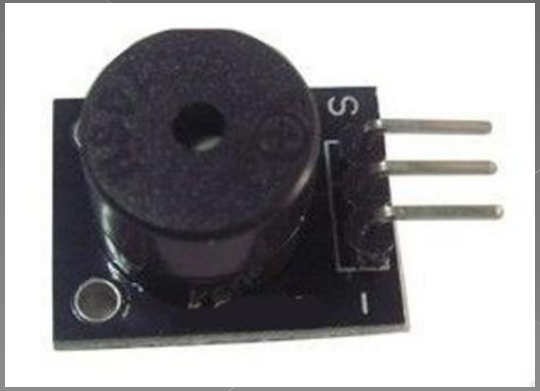
Done compiling.

```
Binary sketch size: 3,672 bytes (of a 32,256 byte maximum)
```

13 Arduino Uno on COM3

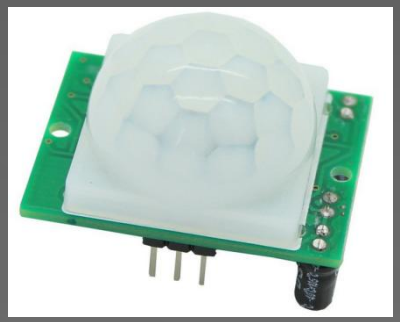
Distance Program

- Pre-defined limit = 4cm
- LED turns on Pin 13's LED
- Serial Monitor Controls data. In the future would like to send data to Raspb Pi
- Raspb Pi records Distance Data and when Alarm is turned on.



Motion Detector

- Goal : HC-SR501 will illuminate an LED when a certain limit or lower is passed.



- Time : how long the LED will stay high
- Distance : how far the HC-SR501 will read in a signal for the LED to turn on.