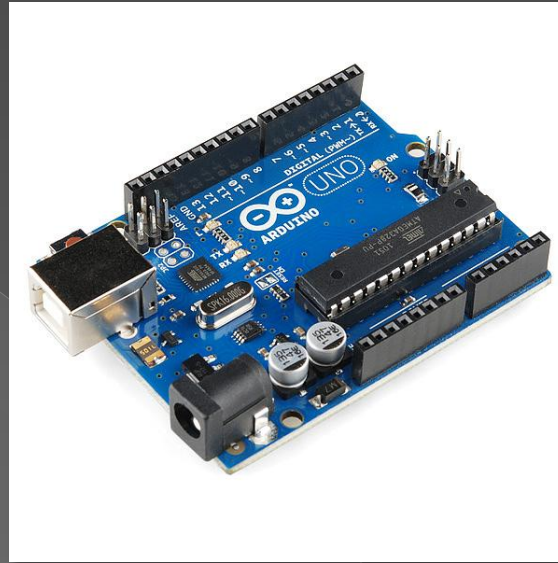
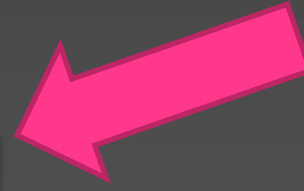


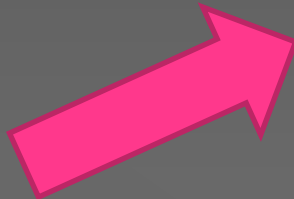
Sensor  
Data 1  
(Temp)



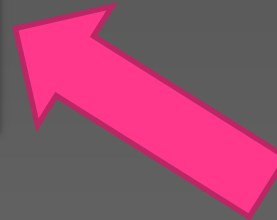
Sensor  
Data 2  
(Light)



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

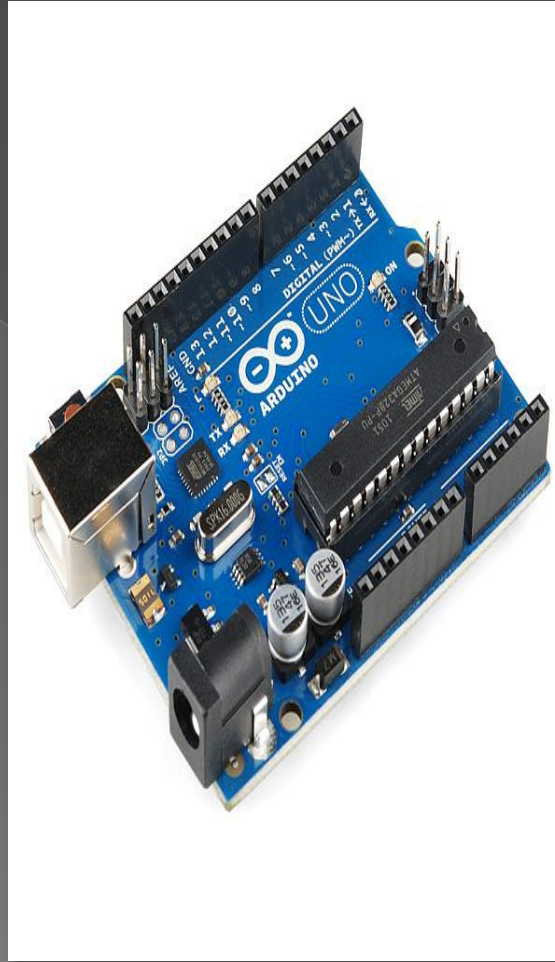
Temp

Motor / LED

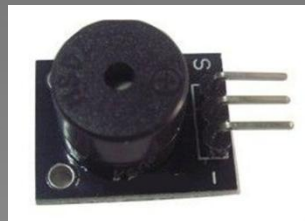
Turn LEDs of certain rooms on and off through the Raspb Pi or have a Motor operate a task.

Alarm

Motion



+



HC-SR04

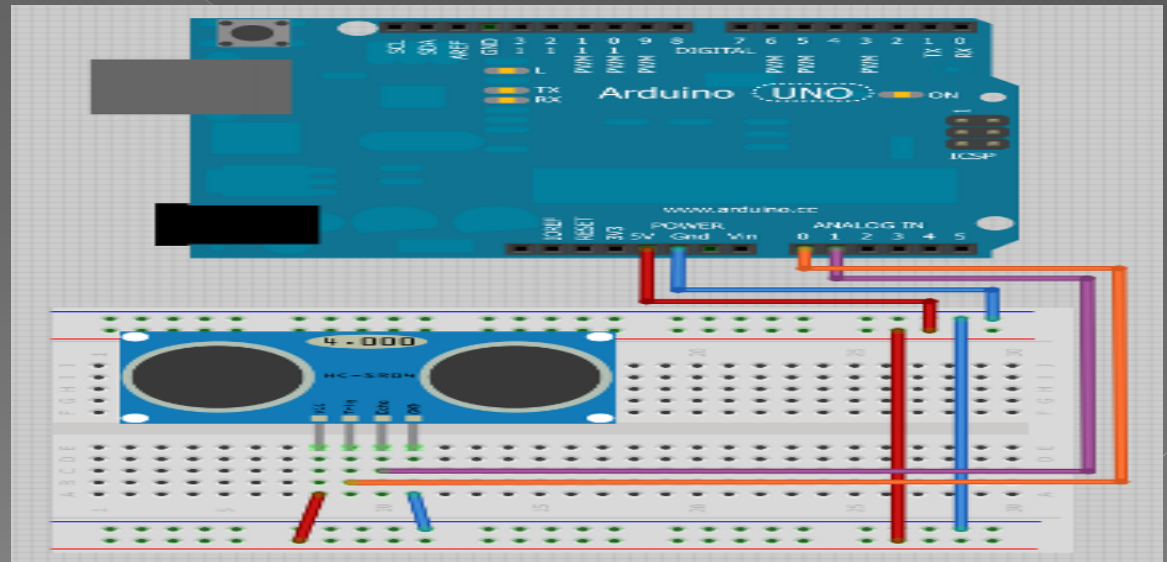
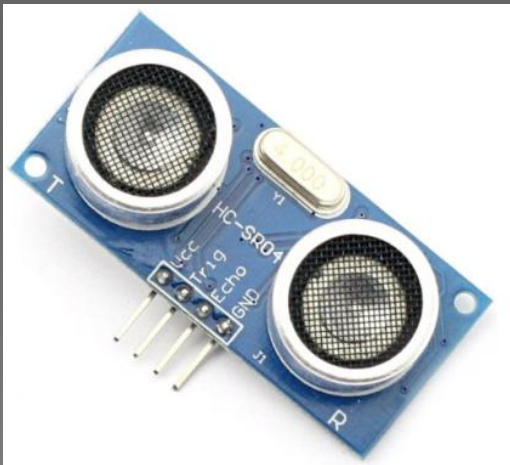
Buzzer



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
}

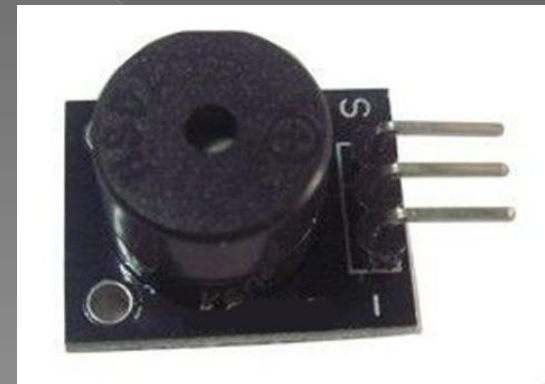
Done compiling.

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.

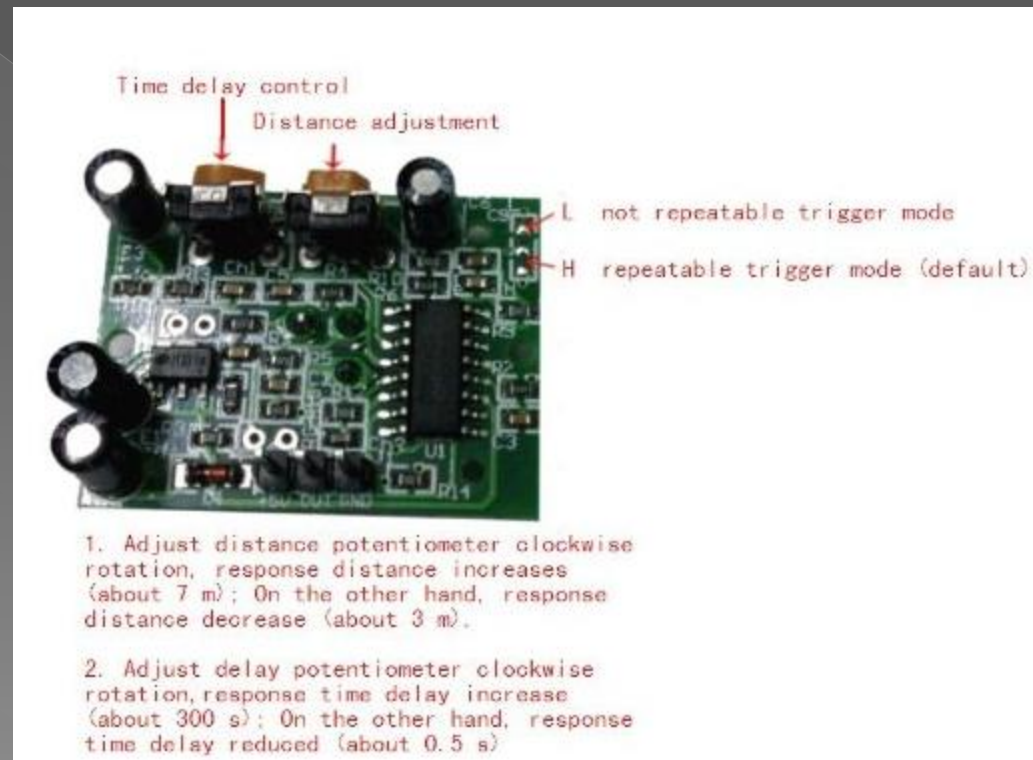


# Motion Detector

- 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.



# Sqlite3

## Setting up database on Raspberry Pi

- Sqlite doesn't have database functions
- downloading packages only through desktop



# SQLITE3- How to create a DB

- ◉ **sqlite3 TemperatureData**
- ◉ SQLite version 3.7.13
- ◉ Enter ".help" for instructions
- ◉ Enter SQL statements terminated with a  
";"
- ◉ **sqlite> create table TD(Time integer,  
Temperature integer);**
- ◉ **sqlite> .separator ,**
- ◉ **sqlite> .import temData.CSV TD**



# Errors received

- Err http://ec2-us-east-mirror.rightscale.com jaunty-updates/main libsqlite3-dev 3.6.10-1ubuntu0.2404 Not Found [IP: 174.129.253.100 80]Err http://ec2-us-east-mirror1.rightscale.com jaunty-updates/main libsqlite3-dev 3.6.10-1ubuntu0.2404 Not FoundErr http://ec2-us-east-mirror2.rightscale.com jaunty-updates/main libsqlite3-dev 3.6.10-1ubuntu0.2404 Not FoundErr http://ec2-us-east-mirror3.rightscale.com jaunty-updates/main libsqlite3-dev 3.6.10-1ubuntu0.2404 Not FoundFailed to fetch http://ec2-us-east-mirror3.rightscale.com/ubuntu/pool/main/s/sqlite3/libsqlite3-dev\_3.6.10-1ubuntu0.2\_i386.deb 404 Not FoundE: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?
- file is encrypted or is not a database

# Solutions

- ◉ Have to use desktop GUI when internet is needed
- ◉ Database file being imported have to be in the same directory as database created
- ◉ Database from the same name even in previous versions of sqlite cannot exist.