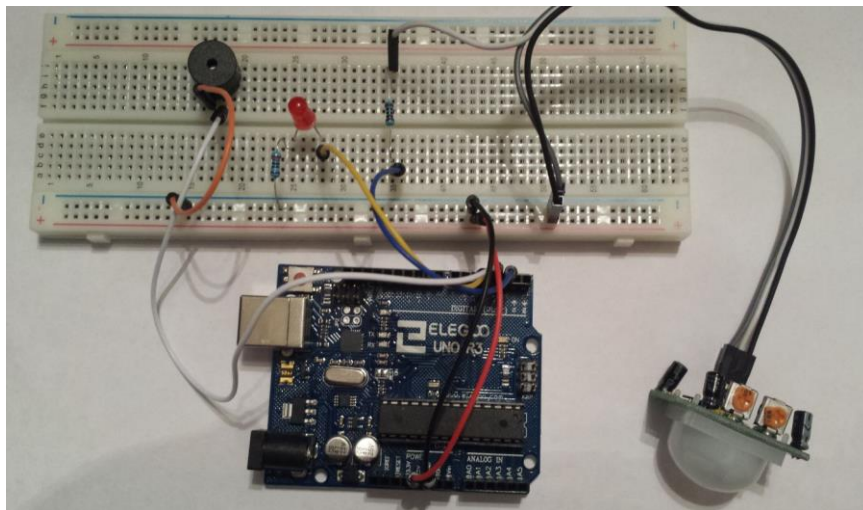# MOTION SENSING SECURITY ALARM

In this project we are going to build a home security alarm system using a PIR Motion Sensor. When the system detects any movement, the Buzzer will sound and the Red LED Lights will turn ON.

COMPONENTS:

1. Arduino Uno Board with UBS Cord
2. Bread Board
3. PIR Sensor
4. LED
5. 330 ohm Resistor
6. Buzzer
7. 1k Resistor
8. Jumper wires

SETTING UP:

1. Connect two jumper wires from 5V and GND on the Arduino to the Positive and Negative rails on the Bread Board.
2. Connect the Motion Sensor Vcc to the Positive rail on the Bread Board. Connect GND to the Negative rail on the Bread Board. Connect the signal wire (middle) from the Sensor to the Bread Board. Put 100 ohm Resistor in line with the signal wire. Connect a wire on the other end of the Resistor and the other end to digital Pin 2 on the Arduino.
3. Connect a 330 ohm Resistor one end on the negative rail of the Bread Board and the other end inside the Board. Connect an LED negative leg in line with the resistor. Connect a wire to the positive side of the LED and to digital Pin 4 on the Arduino.
4. Connect the Buzzer onto the Bread Board. Connect one wire from the Negative side of the Buzzer to the Negative rail of the Bread Board. Connect the Positive side of the Buzzer to digital Pin 3 on the Arduino.
5. Connect the Arduino to the Computer and up load the program onto the Arduino.

If everything is fine the Buzzer will sound and the RED LED will turn ON when the Sensor detects any motion.

Program:

```
int ledPin = 4;            // Pin LED is connected to
int piezoBuzzerPin = 3;    // Pin Piezo Buzzer is connected to
int pirSensorPin = 2;            // PIN PIR Sensor is connected to

int motionDetected = LOW;        // Start MotionDetected as low (No motion
detected)

void setup() {
  pinMode(ledPin, OUTPUT);      // declare LED as output
  pinMode(pirSensorPin, INPUT);     // declare the PIR sensor as input
  pinMode(piezoBuzzerPin, OUTPUT); //declare buzzer as output
  Serial.begin(9600); //Set serial out if we want debugging
  delay(5000); //Allow time for the PIR Sensor to calibrate
}

void loop(){
  motionDetected = digitalRead(pirSensorPin);  // Read the PIR sensor
  if(motionDetected == HIGH) //If motion detected
```

```
  {
    digitalWrite(ledPin, HIGH);
    analogWrite(piezoBuzzerPin, 200);
    delay(100);
    analogWrite(ledPin, LOW);
    analogWrite(piezoBuzzerPin, 25);
    delay(100);
  }
  digitalWrite(ledPin, LOW);
  digitalWrite(piezoBuzzerPin,LOW);
}
```