Code for home automation system

```
const int PingPin=7;
const int buzzPin=4;

//set pin numbers
//const won't change
const int ledPin = 2;   //the number of the LED pin
const int ldrPin = A1;  //the number of the LDR pin

// Pin 13 has an LED connected on most Arduino boards.
// give it a name:
#define PIN_LED_1        9
#define PIN_LED_2        8
#define PIN_LED_3        6
#define PIN_LED_4        5
#define PIN_LED_5        3
#define PIN_GAS          A3

//Tempetature Sensor
const int delayBetweenReads = 5000;
const int sensorPin = A5;

void setup()
{
  //initialize serial communication
  Serial.begin(9600);
  pinMode(buzzPin,OUTPUT);
  pinMode(ledPin, OUTPUT);  //initialize the LED pin as an output
  pinMode(ldrPin, INPUT);   //initialize the LDR pin as an input
```

```
  pinMode(PIN_LED_1, OUTPUT);
  pinMode(PIN_LED_2, OUTPUT);
  pinMode(PIN_LED_3, OUTPUT);
  pinMode(PIN_LED_4, OUTPUT);
  pinMode(PIN_LED_5, OUTPUT);
  pinMode(10 , INPUT ); // signal of pir sensor
  pinMode (11 , OUTPUT ); // output for motion detection
}

void loop()
{
  //establish variables for duration of Ping
  // give a short low pulse beforehand to ensure a clean high pulse
  long duration,cm;
  pinMode(PingPin,OUTPUT);
  digitalWrite(PingPin,LOW);
  delayMicroseconds(2);
  digitalWrite(PingPin,HIGH);
  delayMicroseconds(5);
  digitalWrite(PingPin,LOW);


  pinMode(PingPin,INPUT);
  duration = pulseIn(PingPin,HIGH);
  cm=microsecondsToCentimeters(duration);
  Serial.print("Distance: ");
  Serial.print(cm);
  Serial.print("cm");
  delay(1000);
  Serial.println();
```

```
if(cm < 100)
{
  digitalWrite(buzzPin,HIGH);
}
else
{
  digitalWrite(buzzPin,LOW);
}

int ldrStatus = analogRead(ldrPin);//read the status of the LDR value

Serial.print(ldrStatus);

//check if the LDR status is <= 300
//if it is, the LED is HIGH

 if (ldrStatus <=300) {

  digitalWrite(ledPin, HIGH);
   //turn LED on


 }
else {

  digitalWrite(ledPin, LOW);          //turn LED off

}
```

```
  int value = map(analogRead(PIN_GAS), 300, 750, 0, 100);
  digitalWrite(PIN_LED_1, HIGH);
  digitalWrite(PIN_LED_2, value >= 20 ? HIGH : LOW);
  digitalWrite(PIN_LED_3, value >= 40 ? HIGH : LOW);
  digitalWrite(PIN_LED_4, value >= 60 ? HIGH : LOW);
  digitalWrite(PIN_LED_5, value >= 80 ? HIGH : LOW);

if (digitalRead(10) == HIGH) // check if PIR is triggered
  {
            digitalWrite(11,HIGH);
            delay(100);

            digitalWrite(11,LOW) ;
            delay(100);
  }

  delay(100);
  }

long microsecondsToCentimeters(long microseconds)
{
  return microseconds/29/2;
}
```