"CODE FOR HOME AUTOMATION AND SAFETY SYSTEM"

```cpp
int DISTANCE = 0;
int i = 1;
int v = 0;
int h = 1;
#include <Servo.h>

Servo servoBase;   //Asigno un nombre específico


long readUltrasonicDistance(int triggerPin, int echoPin) {
  pinMode(triggerPin, OUTPUT);
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  return pulseIn(echoPin, HIGH);
}

void setup() {
  servoBase.attach(A1);   //Pin a utilizar para servo
  servoBase.write(0);     //asigno 0 al servo motor

  pinMode(4, OUTPUT);
  pinMode(13, OUTPUT);
  pinMode(A5, INPUT);
  pinMode(11, INPUT);
  pinMode(6, INPUT);
  pinMode(A0, INPUT);
  pinMode(2, OUTPUT);
  pinMode(12, INPUT);
  pinMode(8, INPUT);
  Serial.begin(9600);
}
void loop() {
  // ULTERASONIC SENSOR
  DISTANCE = 0.01723 * readUltrasonicDistance(8, 12);
 Serial.println(DISTANCE);
  if (DISTANCE > 90) {
    digitalWrite(13, LOW);
  }
  if (DISTANCE < 10) {
    digitalWrite(13, HIGH);
```

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  }
  // PIR SENSOR
  int PIRVALUE = digitalRead(6);
  //Serial.println(PIRVALUE);
  int a = PIRVALUE;
  if (a == 0) {
    analogWrite(9, 1000000);
    analogWrite(5,  1000000);
  }


  //GAS SENSOR
GAS:
  {
   int gas = analogRead(A5);
//   Serial.println(gas);
// condt==> gas< 180
    if (gas < 400) {
   servoBase.write(180);

    } else {

      servoBase.write(90);
      delay(500);

      digitalWrite(9, HIGH);
      digitalWrite(5, HIGH);
      digitalWrite(2, HIGH);
      digitalWrite(13, HIGH);

      goto GAS;
    }
  }


// TEMPERTURE SENSOR
  int temp = analogRead(A0);
  //Serial.println(temp);
  if (temp < 200) {
    digitalWrite(2, HIGH);
  }
  if (temp > 400) {
    digitalWrite(2, LOW);

  }}
```