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**CODE:**

```
const int pingPin = 10;

const int ledUS = 2;

const int light = 7;

const int pir = 4;

#define photoSensor A0

#define buzzer 3

int const PINO_SGAS = A5;

int const ledGas = 8;

int const button = 5;

int const motor = 13;


void setup()

{

    pinMode(ledUS, OUTPUT);

    pinMode(light, OUTPUT);

    pinMode(buzzer, OUTPUT);

    pinMode(ledGas, OUTPUT);

    pinMode(motor, OUTPUT);

    pinMode(pir, INPUT);

    pinMode(button, INPUT);

    pinMode(photoSensor, INPUT);

    Serial.begin(9600);

}


void loop()

{

    long duration, cm;
```

```
int valLight = analogRead(photoSensor);
int valPIR= digitalRead(pir);
int valGAS = analogRead(PINO_SGAS);
valGAS = map(valGAS, 300, 750, 0, 100);
int valBt = digitalRead(button);
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);

if(cm < 336){
    digitalWrite(ledUS, HIGH);
}else{
    digitalWrite(ledUS, LOW);
}

if(valLight < 890){
    digitalWrite(light, HIGH);
}else{
    digitalWrite(light, LOW);
}

if(valPIR == 1){
    digitalWrite(buzzer, HIGH);
}else{
```

```
    digitalWrite(buzzer, LOW);  
}
```

```
if(valBt == 1){  
    digitalWrite(motor, HIGH);  
}else{  
    digitalWrite(motor, LOW);  
}
```

```
if(valGAS > 20){  
    digitalWrite(ledGas, HIGH);  
}else{  
    digitalWrite(ledGas, LOW);  
}
```

```
Serial.print(valPIR);  
Serial.println();  
}
```

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