

**Problem Statement :**

IoT-Based Smart Crop Protection System for  
Agriculture

**Domain :**

Internet of Things

**ASSIGNMENT 1**

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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;
}

```

## Simulation :

