

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(valPI
R);
Serial.println();
}
long microsecondsToCentimeters(long
microseconds) { return microseconds / 29 / 2;
}

```

Simulation :

