

# GANESH COLLEGE OF ENGINEERING

**ASSIGNMENT 1 : HOME AUTOMATION SYSTEM**

**TOPIC : IOT ENABLED SMART FARMING APPLICATION**

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**CODING :**

```
#include <Servo.h>
int outputValue =
0; int sen1Value
= 0; int sen2Value = 0;
int const gas_sensor = A1;
int const LDR = A0;
int limit = 400;

long readUltrasonicDistance(int triggerPin, int echoPin)
{ pinMode(triggerPin, OUTPUT); // Clear the
  trigger digitalWrite(triggerPin,
  LOW); delayMicroseconds(2);
  // Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH); delayMicroseconds(10);
  digitalWrite(triggerPin, LOW); pinMode(echoPin,
  INPUT);
  // Reads the echo pin, and returns the sound wave travel time in microseconds return
  pulseIn(echoPin, HIGH);
}

Servo servo_7;
void setup()
{
  Serial.begin(9600); //initialize serial communication pinMode(A0,
  INPUT); //LDR pinMode(A1, INPUT); //gas sensor pinMode(13,
  OUTPUT); //connected to
  relay servo_7.attach(7, 500, 2500); //servo motor
  pinMode(8, OUTPUT); //signal to piezo buzzer
  pinMode(9, INPUT); //signal to PIR
```

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    pinMode(10, OUTPUT);          //signal to npn as switch pinMode(4,
    OUTPUT); //Red LED
pinMode(3, OUTPUT);              //Green LED

} void loop()
{

    int val1 =
    analogRead(LDR); if (val1
    > 500)
    { digitalWrite(13,
        LOW);
        Serial.print("Bulb
        ON=");
        Serial.print(val1);
    } else
    {
        digitalWrite(13, HIGH);

        Serial.print("Bulb OFF = ");

        Serial.print(val1);
    }
    //----- light & fan control //

    sen2Value = digitalRead(9); if
    (sen2Value == 0)
    { digitalWrite(10, LOW); //npn as switch OFF digitalWrite(4, HIGH); //
        Red LED ON, indicating no motion digitalWrite(3, LOW); //Green
        LED OFF, since
        no Motion detected
        Serial.print(" || NO Motion Detected " );
    } if (sen2Value == 1)
    { digitalWrite(10, HIGH); //npn as switch ON delay(5000); digitalWrite(4,
        LOW); // RED LED OFF digitalWrite(3, HIGH); //GREEN LED ON ,
        indicating motion detected Serial.print("|| Motion Detected!
        ");

    // ----- Gas Sensor // int val =

```

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analogRead(gas_sensor);

                                //read sensor

value Serial. print("// Gas Sensor Value =
");

Serial. print(val);                                 //Printing in serial monitor

//val = map(val, 300,
750, 0, 100);

if (val > limit)
    { tone(8, 650);
      } delay(30 0);
      noTone(8
);

//----- servo motor //

//- -
senlValue = 0. 01723 * readUltrasonicDistance(6, 6);

if (senlValue < 100)
    { servo_7. write(90);
      Serial. print(" || Door Open! ;
Distance = ");
      Serial. print(senlValue);
Serial. print("\n");
} else
{
      servo_7. write(0);
      Serial. print(" || Door Closed! ; Distance = ");

Serial. print(senlValue);
      Serial. print("\n");

} delay(10); // Delay a little bit to improve simulation performance

}

```

IMAGE :

