GANESH COLLEGE OF ENGINEERING

ASSIGNMENT 1 : HOME AUTOMATION SYSTEM

TOPIC : IOT ENABLED SMART FARMING APPLICATION

SUBMITTED BY : P. NATRAJ

ROLL NO : 620619106018

CODING :

```
#include <Servo. h>
int output1Value =
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(triggerPi n, 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
  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 =
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                  //

 //-                                              -
 sen1Value = 0. 01723 * readUltrasonicDistance(6,  6);

 if (sen1Value < 100)
          { servo_7. write(90);
   Serial. print(" || Door Open!  ;
   Distance = ");
   Serial. print(sen1Value);
 Serial. print("\n");
 } else
  {
          servo_7. write(0);
           Serial. print(" || Door Closed!  ;  Distance = ");


   Serial. print(sen1Value);
           Serial. print("\n");

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


}
```

IMAGE :