ASSIGNMENT- 1

PROJECT DOMAIN	INTERNET OF THINGS
PROJECT TITLE	IoT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE
TEAM ID	PNT2022TMID44357
NAME	POOJA N L
ROLL NO	731119106023
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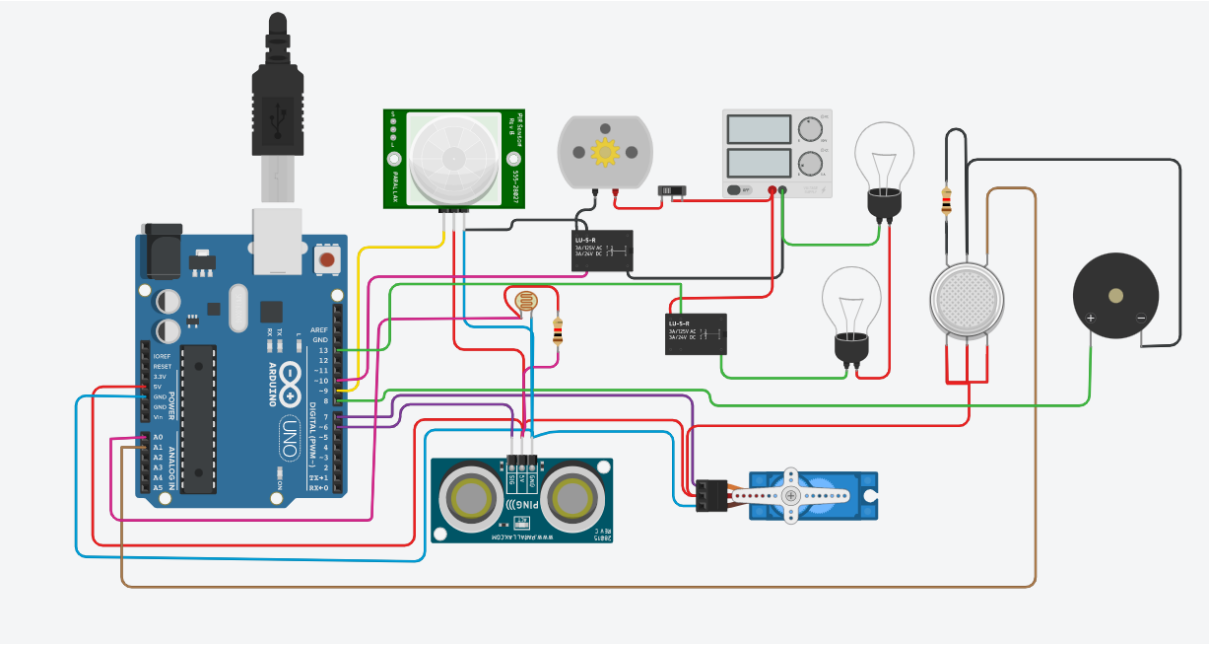
MAXIMUM MARKS	2 MARKS

QUESTION:

MAKE A SMART HOME WITH 2-3 SENSORS, LED, BUZZER IN SINGLE CODE AND CONNECTIONS.

CIRCUIT:



CODE:

```
#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);
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  return pulseIn(echoPin, HIGH);
}
 Servo servo_7;
 void setup()
{
 Serial.begin(9600);
  pinMode(A0, INPUT);
  pinMode(A1,INPUT);
  pinMode(13, OUTPUT);
  servo_7.attach(7, 500, 2500);
   pinMode(8,OUTPUT);
  pinMode(9, INPUT);
  pinMode(10, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(3, OUTPUT);
 }
```

```
void loop()
{
 //------light intensity control------//
//-------------------------------------------------------------
 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(3000);
```

```
        digitalWrite(4, LOW); // RED LED OFF
        digitalWrite(3, HIGH);//GREEN LED ON , indicating motion detected
    Serial.print("          || Motion Detected!     " );
        }
  delay(300);
  //-------------------------------------------------------------
     // ------- 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(300);
        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);
```