Assignment -1

Simple Home Automation

Assignment Date	20 September 2022
Student Name	Manoj N M
Student Roll Number	2019504036
Maximum Marks	2 Marks

Question:

Design and Program a simple Home automation circuit using Arduino Uno board along with a Buzzer, LED, switch.

Solution:

```
int sensorValue = 0;
int greenled = 6;
int redled = 8;
int buzzer_pin = 11;
int sen1Value = 0;
int A;

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);
}
void setup()
{
   Serial.begin (9600);
   pinMode(11, OUTPUT);
```

```
  pinMode(6, OUTPUT);
  pinMode(8, OUTPUT);
  pinMode(4, INPUT);
  pinMode(12, OUTPUT);
  pinMode(13, OUTPUT);
  pinMode(A1, INPUT);
}

void loop()
{
 //-----Gas Sensor-----//
//-----------------------------------
 int sensorValue = analogRead(A0);
 Serial.println(sensorValue);

 if(sensorValue > 100)
 {
  digitalWrite (buzzer_pin, HIGH);
  digitalWrite (redled, HIGH);
 }
 else
 {
  digitalWrite (buzzer_pin, LOW);
  digitalWrite (redled, LOW);
 }
 delay(1000);

//--------------------------------------------
 //---------UltrasonicDistance----------//
//--------------------------------------------
 sen1Value = 0.01723*readUltrasonicDistance(3,2);

 if(sen1Value<10)
 {
```

```
    Serial.print(" ||Door Open! ; Distance = ");
    Serial.print(sen1Value);
    digitalWrite (buzzer_pin, HIGH);
    digitalWrite (greenled, HIGH);
  }
  else
  {
    Serial.print(" ||Door Closed! ; Distance = ");
    Serial.print(sen1Value);
    digitalWrite (buzzer_pin, LOW);
    digitalWrite (greenled, LOW);
   }
  delay(1000);

//-----------------------------------------------------
   //--------------PIR sensor-----------------//
//-----------------------------------------------------
  if (digitalRead(4)==1)
  {
    digitalWrite(12,HIGH);
    delay(1000);
  }
  else
  {
    digitalWrite(12,LOW);
    delay(100);
  }
//-----------------------------------------------------
   //--------------Temp Sensor-----------------//
//-----------------------------------------------------
  A = analogRead(A1);
  Serial.println(A);
  delay(1000);
```

```
 if(A >= 180)
 {
   digitalWrite(13, 1);
 }
 else
 {
   digitalWrite(13, 0);
 }

}
```

Circuit: