Assignment -1

Arduino Uno Programming

Assignment Date	20 September 2022
Student Name	Mr. Thilak K
Student Roll Number	2019504599
Maximum Marks	2 Marks

Question-1:

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);
  }

}
```