Assignment -1
Simple Home Automation

Assignment Date	20 September 2022
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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);
```

```arduino
  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)

  {
```

```arduino
    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: