

Assignment -1

Arduino Programming

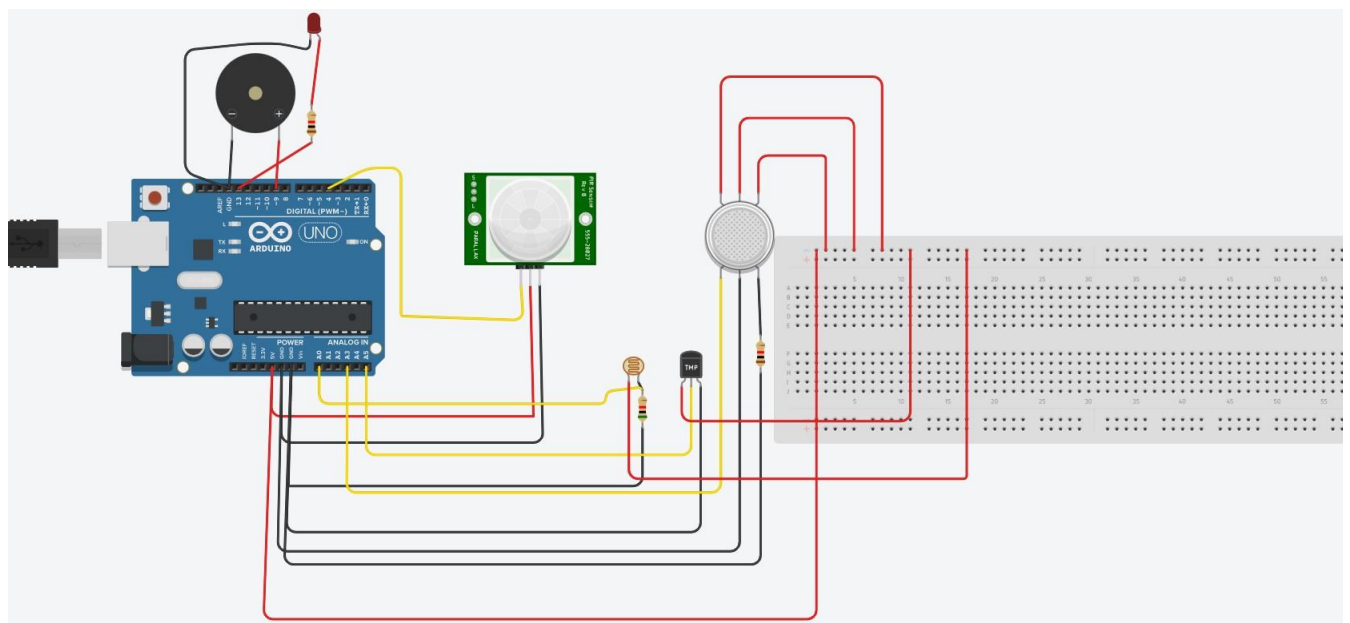
Assignment Date	23 September 2022
Student Name	JAYA SREE C T
Student Roll Number	962819106018
Maximum Marks	2 Marks

Question-1:

Assignment 1: Make a Smart Home in Tinkercad, using 2+ sensors, Led, Buzzer in single code and circuit.

SOLUTION:

CIRCUIT DIAGRAM:



CODE

```
// C++ code
//
void setup()
{
    pinMode(4, INPUT);
    pinMode(9, OUTPUT);
    pinMode(13, OUTPUT);
    Serial.begin(9600);
}

void loop()
{
    int m=digitalRead(4);
    int ldr=analogRead(A0); //ldr output
    double rv=((float)ldr/1024)*5; //resistor voltage
    double ldrv=5-rv; //ldr voltage
    double Rldr=(ldrv/rv)*5000; //reference resistor 5000 ohm
    double lux=12518931*pow(Rldr, -1.405); //light intensity
    Serial.print("motion detection:");
    Serial.println(m);
    Serial.print("lux:");
    Serial.println(lux);
    int gas=analogRead(A3);
    if(m==1)
    {
        if ((lux<=300)&&(m==1))
        {
            digitalWrite(13, HIGH);
            Serial.println("LED ON");
        }
        else
        {
            digitalWrite(13, LOW);
        }
    }
    else
    {
        digitalWrite(13, LOW);
    }
    if(gas>300)
```

```
{
    Serial.println("Smoke detected");
    digitalWrite(9,HIGH);
}
else
{
    digitalWrite(9,LOW);
}
double temp =analogRead(A5);
Serial.print("temperature sensor output:");
Serial.println(temp);
double b=(temp/1024)*5;
Serial.print("voltage reading:");
Serial.println(b);
double c=(b-0.5)*100;
Serial.print("temperature:");
Serial.print(c);
Serial.println("c");

}
```

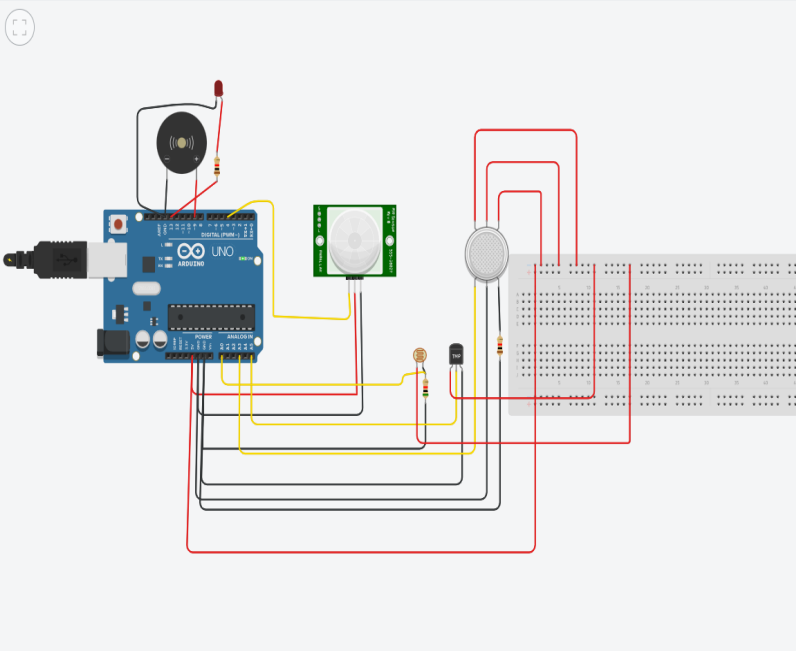
Output:

TINKER C.A.D. Assignment1 All changes saved

Simulator time: 00:00:07

Code Stop Simulation Send To

1 (Arduino Uno R3)



```
19 Serial.print("motion detection:");
20 Serial.println(m);
21 Serial.print("lux:");
22 Serial.println(lux);
23 int gas=analogRead(A3);
24 if (m==1)
25 {
26   if ((lux<=300)&&(m==1))
27   {
28     digitalWrite(13,HIGH);
29     Serial.println("LED ON");
30   }
31   else
32   {
33     digitalWrite(13,LOW);
34   }
35 }
36 else
37 {
38   digitalWrite(13,LOW);
39 }
40 if (gas>300)
41 {
42   Serial.println("Smoke detected");
43 }
```

Serial Monitor

voltage reading:0.75
temperture:24.71c
motion detection:0
lux:0.53
Smoke detected
temperature sensor output:153.00
voltage reading:0.75
temperture:24.71c

Send Clear



Serial Monitor

voltage reading:0.75
temperture:24.71c
motion detection:0
lux:0.53
Smoke detected
temperature sensor output:153.00
voltage reading:0.75
temperture:24.71c