

ASSIGNMENT 1

Date: 12.09.2022

Create a circuit with piezo alarm, PIR sensor, Temperature sensor consisting following features

1. Alarm when temperature is above 60 degree celcius, and
2. Alarm when motion detected using Passive Infrared sensor

PROGRAM:

```
// C++ code
int pir, buzz;
float temp;
void setup()
{
    pir = 3;
    buzz = 12;
    pinMode(pir, INPUT);
    pinMode(buzz, OUTPUT);
    Serial.begin(9600);
}

void loop()
{
    //Motion Monitoring
    int motion = digitalRead(pir);
    if(motion == 1)
    {
        tone(buzz, 50);
        Serial.println("Motion Status: Detected");
        delay(50);
    }
    else
    {
        noTone(buzz);
        Serial.println("Motion Status: Not Detected");
    }

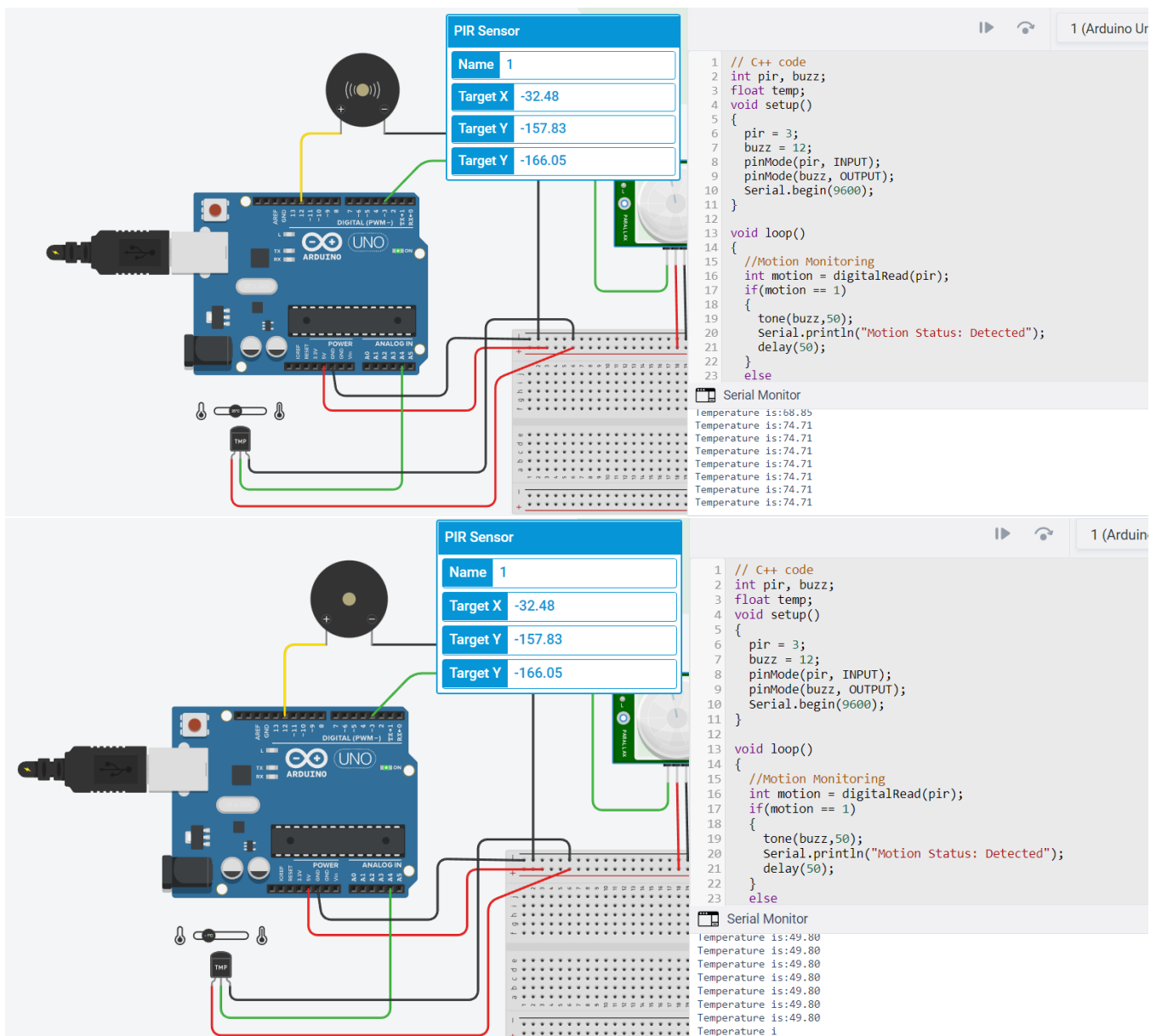
    //Temperature Measurement
    float data = analogRead(A4);
```

```

float temp =(((data/1024.0)*5)*100);
Serial.print("Temperature is:");
Serial.println(temp);
if(temp>60)
{
    tone(buzz,200,200);
    delay(500);
}
else{
    noTone(buzz);
}
}

```

OUTPUT :



The top screenshot shows the Arduino Uno connected to a PIR sensor, a buzzer, and a temperature sensor. The PIR sensor is connected to digital pin 3, the buzzer to digital pin 12, and the temperature sensor to analog pin A0. The bottom screenshot shows the same setup with the Serial Monitor open, displaying the output of the code.

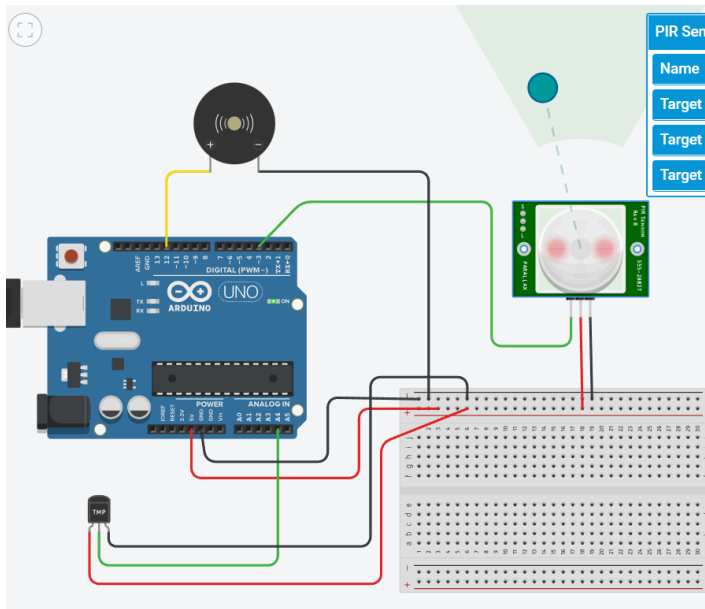
PIR Sensor

Name	Target X	Target Y	Target Z
1	-32.48	-157.83	-166.05

```

// C++ code
1 int pir, buzz;
2 float temp;
3 void setup()
4 {
5     pir = 3;
6     buzz = 12;
7     pinMode(pir, INPUT);
8     pinMode(buzz, OUTPUT);
9     Serial.begin(9600);
10 }
11
12 void loop()
13 {
14     //Motion Monitoring
15     int motion = digitalRead(pir);
16     if(motion == 1)
17     {
18         tone(buzz,50);
19         Serial.println("Motion Status: Detected");
20         delay(50);
21     }
22     else
23
24 Serial Monitor
25 temperature is:68.85
26 Temperature is:74.71
27 Temperature is:74.71
28 Temperature is:74.71
29 Temperature is:74.71
30 Temperature is:74.71
31 Temperature is:74.71
32 Temperature is:74.71
33
34 // C++ code
35 1 int pir, buzz;
36 2 float temp;
37 3 void setup()
38 4 {
39 5     pir = 3;
40 6     buzz = 12;
41 7     pinMode(pir, INPUT);
42 8     pinMode(buzz, OUTPUT);
43 9     Serial.begin(9600);
44 10 }
45 11
46 12 void loop()
47 13 {
48 14     //Motion Monitoring
49 15     int motion = digitalRead(pir);
50 16     if(motion == 1)
51 17     {
52 18         tone(buzz,50);
53 19         Serial.println("Motion Status: Detected");
54 20         delay(50);
55 21     }
56 22     else
57 23
58 24 Serial Monitor
59 25 temperature is:49.80
60 26 Temperature is:49.80
61 27 Temperature is:49.80
62 28 Temperature is:49.80
63 29 Temperature is:49.80
64 30 Temperature is:49.80
65 31 Temperature is:49.80
66 32 Temperature is:49.80
67 33

```



PIR Sensor

Name	1
Target X	-32.48
Target Y	-157.83
Target Y	-166.05

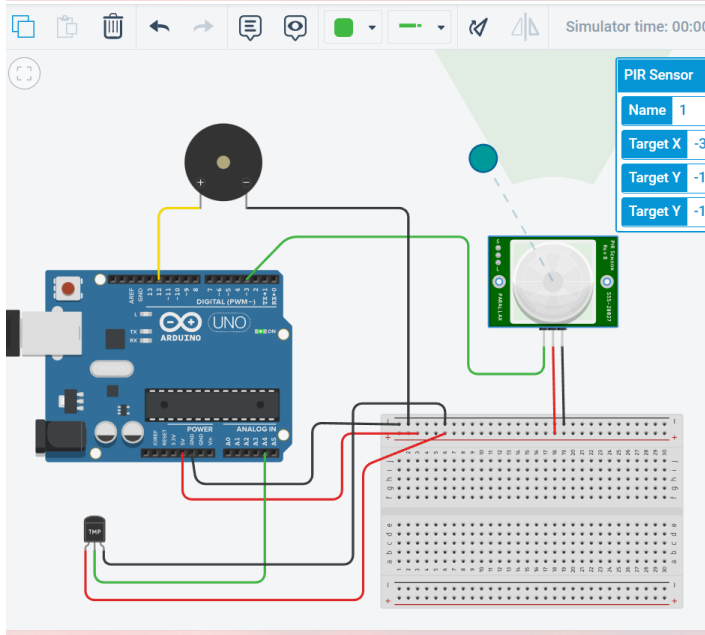
```

1 // C++ code
2 int pir, buzz;
3 float temp;
4 void setup()
5 {
6   pir = 3;
7   buzz = 12;
8   pinMode(pir, INPUT);
9   pinMode(buzz, OUTPUT);
10  Serial.begin(9600);
11 }
12
13 void loop()
14 {
15   //Motion Monitoring
16   int motion = digitalRead(pir);
17   if(motion == 1)
18   {
19     tone(buzz,50);
20     Serial.println("Motion Status: Detected");
21     delay(50);
22   }
23   else
  
```

Serial Monitor

```

Temperature is:37.11
Motion Status: Detected
Temperature is:37.11
Motion Status: Detected
Temperature is:37.11
Motion Status: Detected
Temperature is:37.11
Motion Status:
  
```



PIR Sensor

Name	1
Target X	-32.48
Target Y	-157.83
Target Y	-166.05

```

20   Serial.println("Motion Status: Detected");
21   delay(50);
22 }
23 else
24 {
25   noTone(buzz);
26   Serial.println("Motion Status: Not Detected");
27 }
28
29 //Temperature Measurement
30 float data = analogRead(A4);
31 float temp = (((data/1024.0)*5)*100);
32 Serial.print("Temperature is:");
33 Serial.println(temp);
34 if(temp>60)
35 {
36   tone(buzz,200,200);
37   delay(500);
38 }
39 else{
40   noTone(buzz);
41 }
42
  
```

Serial Monitor

```

Motion Status: Not Detected
Temperature is:40.04
Motion Status: Not Detected
Temperature is:40.04
Motion Status: Not Detected
Temperature is:40.04
Motion Status: Not Detected
Temperature
  
```