

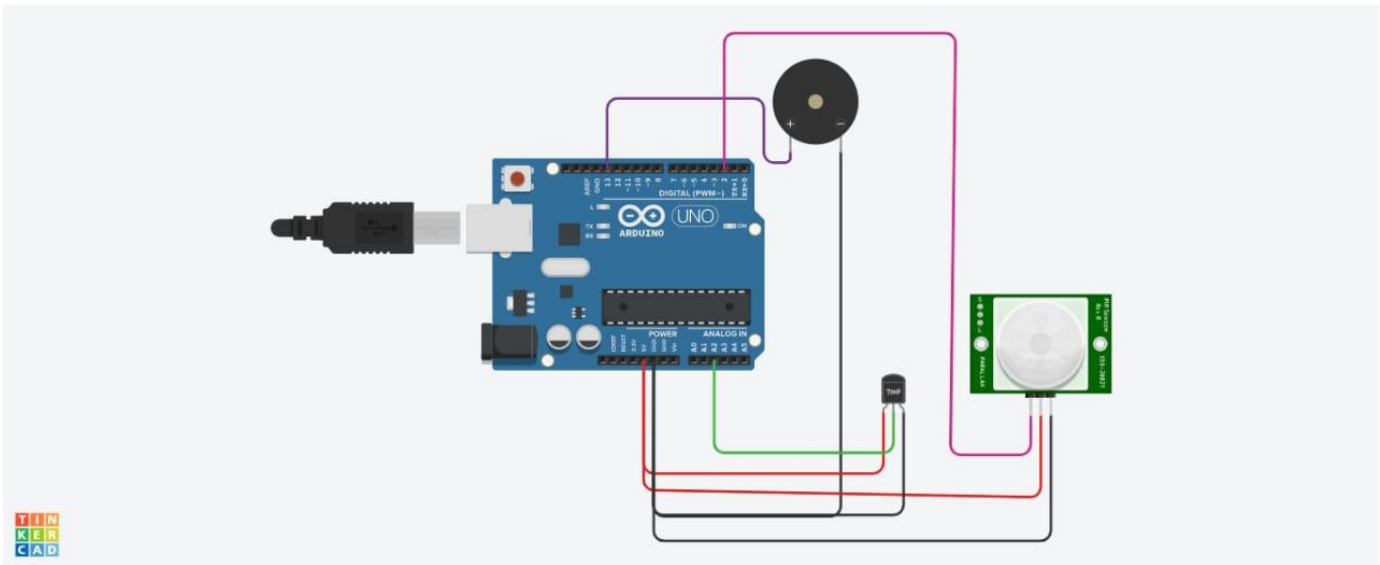
ASSIGNMENT-1

Question:

Create a circuit with Piezo alarm, PIR sensor, Temperature sensor with below functionalities:

- 1. Alarm should sound in one manner if temperature is above 60 C**
- 2. Alarm should sound with another frequency of motion is detected in PIR sensor**

Circuit Diagram:



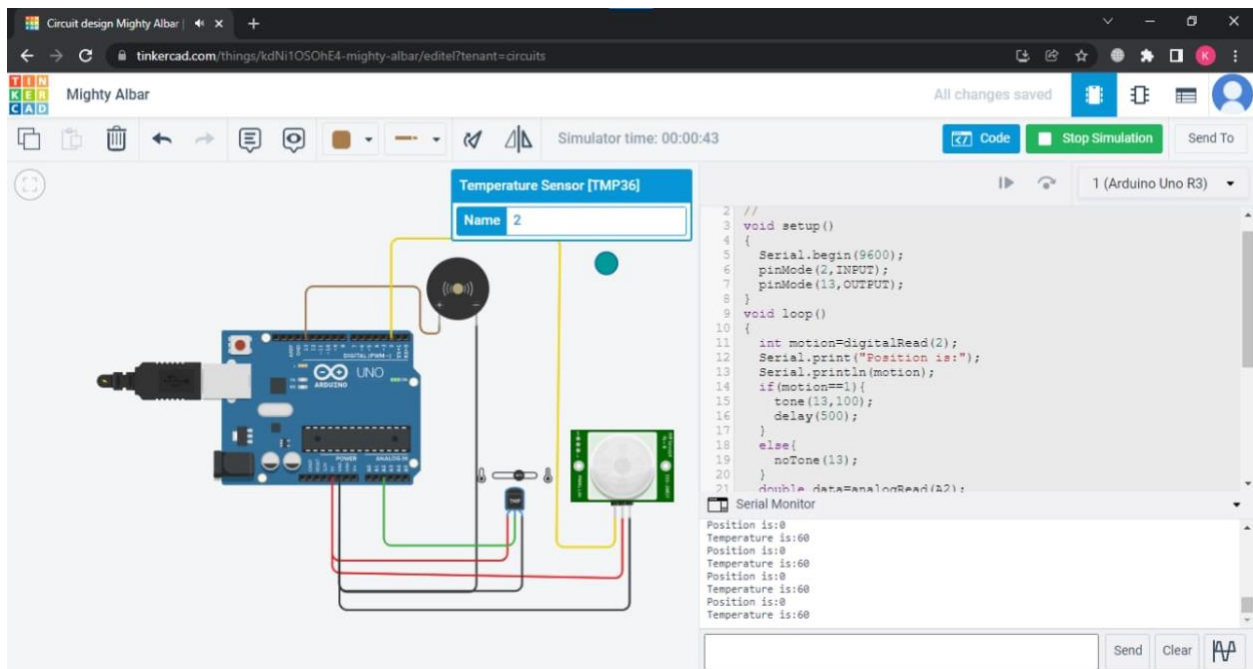
Coding :

```
void setup()
{
  Serial.begin(9600);
  pinMode(2, INPUT);
  pinMode(13, OUTPUT);
}
void loop()
{
  int motion=digitalRead(2);
  Serial.print("Position is");
  Serial.println(motion);
  if(motion==1){
    tone(13,100);
    delay(500);
  }
  else{
    noTone(13);
  }
  double data=analogRead(A2);
  double n=data/1024;
  double volt=n*5;
  double off=volt-0.5;
  int temp=off*100;
```

```
Serial.print("Temperature is:");  
Serial.println(temp);  
if(temp==60){  
    tone(13,400);  
    delay(500);  
}  
else{  
    noTone(13);  
}  
}
```

OutPut:

Temperature above 60 C



The screenshot displays a Tinkercad simulation environment. On the left, an Arduino Uno R3 is connected to a temperature sensor (TMP36) and a buzzer. The sensor is connected to the Arduino's A0 pin, and the buzzer is connected to the Arduino's 5V and GND pins. The code in the Serial Monitor is as follows:

```
//  
2  
3 void setup()  
4 {  
5   Serial.begin(9600);  
6   pinMode(2, INPUT);  
7   pinMode(13, OUTPUT);  
8 }  
9 void loop()  
10 {  
11   int motion = digitalRead(2);  
12   Serial.print("Position is:");  
13   Serial.println(motion);  
14   if (motion == 1) {  
15     tone(13, 100);  
16     delay(500);  
17   }  
18   else {  
19     noTone(13);  
20   }  
21   double data = analogRead(A0);  
22 }
```

The Serial Monitor output shows the following sequence of events:

```
Position is:0  
Temperature is:60  
Position is:0  
Temperature is:60  
Position is:0  
Temperature is:60  
Position is:0  
Temperature is:60
```

Motion detection in PIR sensor

Circuit design Mighty Albar | x +

tinkercad.com/things/kdNi10SOH54-mighty-albar/edit?tenant=circuits

Mighty Albar

All changes saved

Simulator time: 00:00:22

Code Stop Simulation Send To

1 (Arduino Uno R3)

PIR Sensor

Name 1

```
2 //
3 void setup()
4 {
5   Serial.begin(9600);
6   pinMode(2, INPUT);
7   pinMode(13, OUTPUT);
8 }
9 void loop()
10 {
11   int motion=digitalRead(2);
12   Serial.print("Position is:");
13   Serial.println(motion);
14   if(motion==1){
15     tone(13,100);
16     delay(500);
17   }
18   else{
19     noTone(13);
20   }
21   double data=analogRead(A2);
```

Serial Monitor

Temperature is:24
Position is:0
Temperature is:24
Position is:0
Temperature is:24
Position is:1
Temperature is:24
Position is:1

Send Clear