

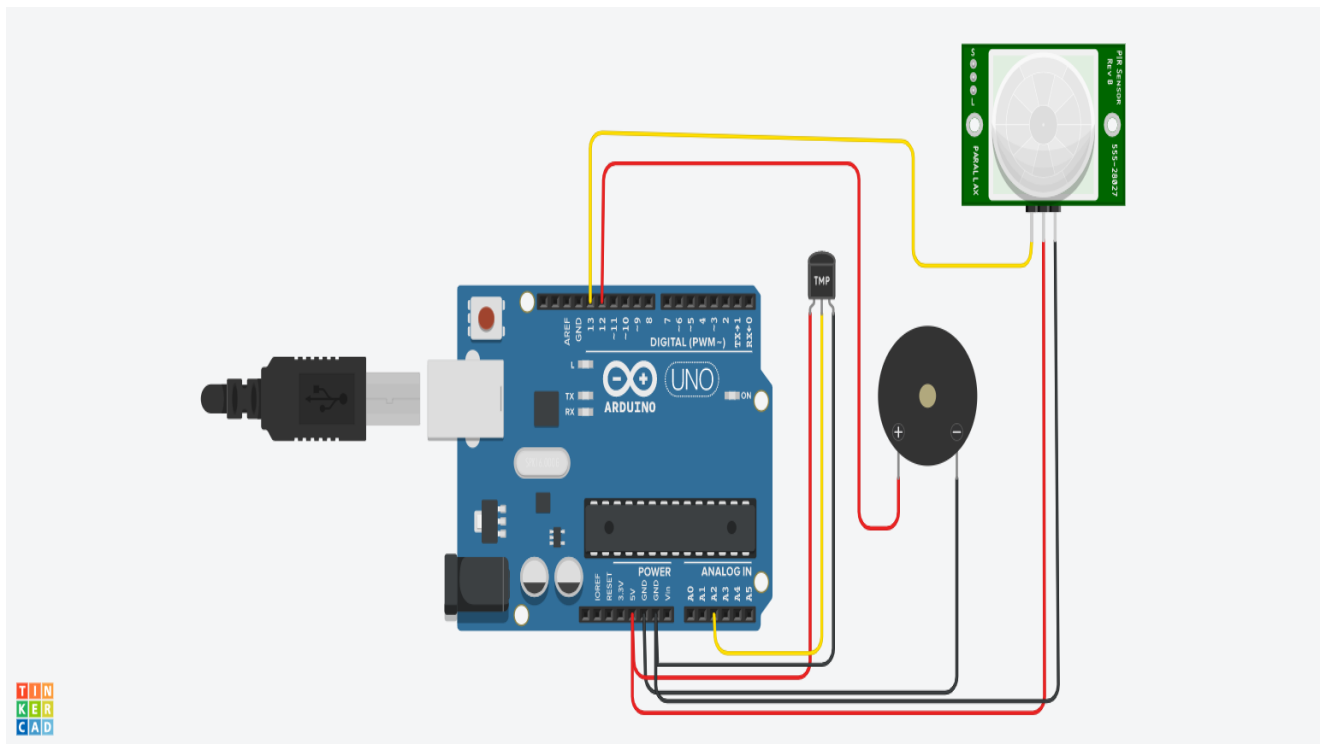
POLA NAGAMURALI PRASAD

## Circuit Design using Piezo Alarm for Detection of Rise in Temperature using Temperature Sensor and Motion Detection using PIR Sensor

### Features:

- ❖ Alarm buzzes when temperature is detected above 60 deg C.
- ❖ Alarm buzzes another sound if motion is detected.

### Circuit Diagram:



## Program:

```
void setup()

{

    Serial.begin(9600);

    pinMode(13,INPUT);

    pinMode(12,OUTPUT);

}

void loop()

{

    double data=analogRead(A2);

    double n=data/1024;

    double volt=n*5;

    double off=volt-0.5;

    double temperature=off*100;

    int motion=digitalRead(13);

    for(int freq=49;freq<=50;freq++)

    {

        if(temperature>=60)

        {

            Serial.println("Temperature is above 60");

            tone(12,freq);

            delay(100);

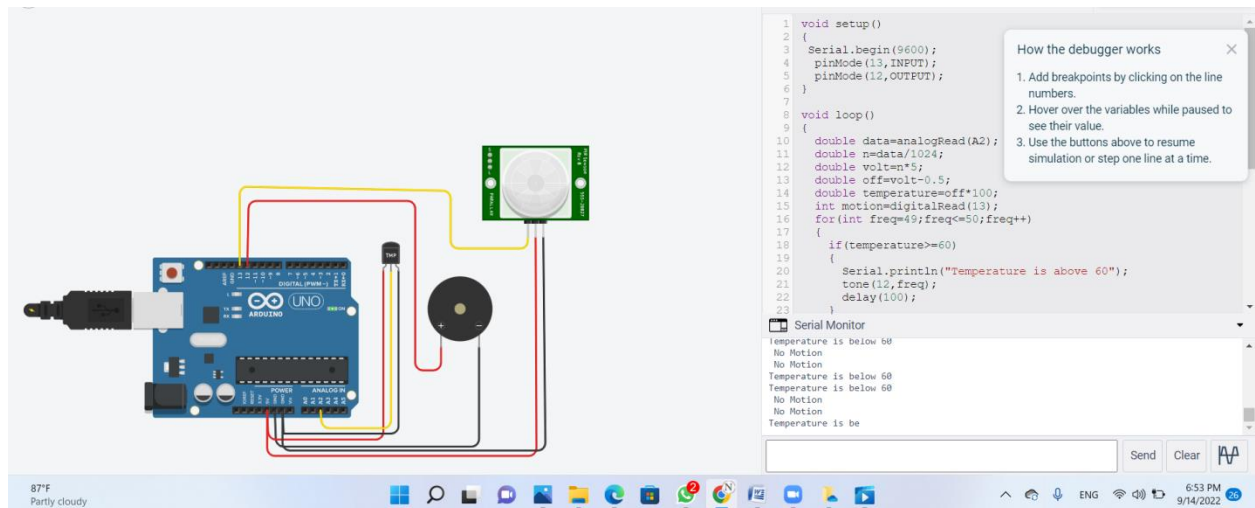
        }

        else
```

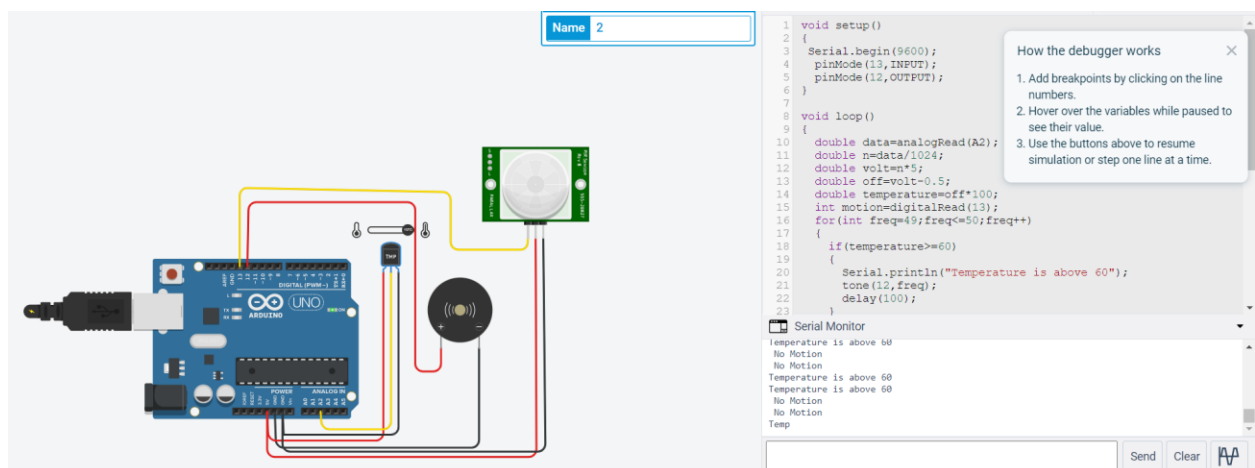
```
{  
    Serial.println("Temperature is below 60");  
    noTone(12);  
}  
}  
for(int freq=9;freq<=10;freq++)  
{  
    if(motion==1)  
    {  
        Serial.println("Motion Detected");  
        tone(12,freq);  
        delay(200);  
    }  
    else  
    {  
        Serial.println(" No Motion");  
        noTone(12);  
    }  
}  
}
```

Outputs:

Initial Condition



When Temperature is above 60 C



## When Motion Detected

The screenshot displays the Arduino IDE interface for an Arduino Uno R3. On the left, a circuit diagram shows an Arduino Uno connected to a PIR sensor and a buzzer. The PIR sensor is connected to digital pin 13 (VCC), digital pin 12 (GND), and analog pin A2 (Signal). The buzzer is connected to digital pin 12 (GND) and digital pin 12 (Signal). In the center, a 'PIR Sensor' configuration window is open, showing the following values:

Name	Value
Name	1
Target X	-4.88
Target Y	-167.05
Target Z	-173.05

On the right, the C++ code is shown:

```
1 void setup()
2 {
3   Serial.begin(9600);
4   pinMode(13, INPUT);
5   pinMode(12, OUTPUT);
6 }
7
8 void loop()
9 {
10  double data=analogRead(A2);
11  double n=data/1024;
12  double volt=n*5;
13  double off=volt-0.5;
14  double temperature=off*100;
15  int motion=digitalRead(13);
16  for(int freq=49;freq<=50;freq++)
17  {
18    if(temperature>=60)
19    {
20      Serial.println("Temperature is above 60");
21      tone(12,freq);
22      delay(100);
23    }
24  }
```

Below the code, the Serial Monitor shows the following output:

```
Temperature is below 60
Temperature is below 60
Motion Detected
Motion Detected
Temperature is below 60
Temperature is below 60
Motion Detected
Motion Detected
```

Video Link:

<https://drive.google.com/file/d/1wnX9hNVYRszyR4QrLmNWh7E4e0kgpa2k/view?usp=drivesdk>