

# IBM ASSIGNMENT-1

Assignment Date	17 September 2022
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Maximum Marks	PNT2022TMID39421

## Assignment details:

Technology: IOT

Domain: Smart solution for railways

## Assignment Question :-

Construct a home automation system using Arudino Uno circuit using 2+ sensors, LED and a Buzzer.

## Assignment Description:

This is a connection setup of an Arudino Uno, LED(3),temperature sensor, humidity sensor and a buzzer. Initially the arudino is connected to the temperature sensor and with LEDs. When the temperature varies different LEDs glow. Then the arudino is connected to the PIR sensor which is connected to the buzzer. The PIR sensor senses the movement of humans and produces output according to the movement.

## Apparatus Required:

- Arudino Uno
- LEDs(Green, Blue, Red)
- PIR sensor
- Temperature Sensor
- Buzzer

## Code:

```
const int hot = 87; //set hot parameter
const int cold = 75; //set cold parameter
int Buzz= 8; // Define Bizzer pin
int PIR= 5; // Define PIR pin
int val= 0; // Initializing the value as zero at the beginning
void setup() {
  pinMode(A2, INPUT); //sensor
```

```
pinMode(2, OUTPUT); //blue
pinMode(3, OUTPUT); //green
pinMode(4, OUTPUT); //red
Serial.begin(9600);
  pinMode(Buzz, OUTPUT);
pinMode(PIR, INPUT);
Serial.begin(9600);
}

void loop() {
  int sensor = analogRead(A2);
  float voltage = (sensor / 1024.0) * 5.0;
  float tempC = (voltage - .5) * 100;
  float tempF = (tempC * 1.8) + 32;
  Serial.print("temp: ");
  Serial.print(tempF);
  if (tempF < cold) { //cold
    digitalWrite(2, HIGH);
    digitalWrite(3, LOW);
    digitalWrite(4, LOW);
    Serial.println(" It's Cold.");
    if(val == HIGH){
      digitalWrite(Buzz, HIGH); // Turn Buzzer ON
      Serial.println("Movement Detected"); // Print this text in Serial Monitor
    }
  }
  else if (tempF >= hot) { //hot
    digitalWrite(2, LOW);
    digitalWrite(3, LOW);
    digitalWrite(4, HIGH);
    Serial.println(" It's Hot.");
  }
  else { //fine
    digitalWrite(2, LOW);
    digitalWrite(3, HIGH);
    digitalWrite(4, LOW);
    Serial.println(" It's Fine.");
    digitalWrite(Buzz, LOW);
    Serial.println("Movement not Detected");
  }
  delay(1000);
}
```

}

}

## Model Diagram

