IBM ASSIGNMENT

Project details: **Submitted by: Yokeshwari. S**

Technology: IOT   **Reg num: 510119104023**

Domain: Smart solution for railways

Project Description:

This is a connection setup of an Arudino Uno, LED lights(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