IBM ASSIGNMENT

Project details:

Technology: IOT

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Domain: Smart Solution for Railways

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Project description:

This is a connection setup of an Arudino Uno, LED light (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 a buzzer. The PIR sensor senses the movement of humans and produces output according to the movement.

Apparatus required:

- Arudino UNO
- LEDs(blue,green,red)
- PIR sensor
- Temperature sensor
- Buzzer

Coding:

```
const int hot = 87; //set hot parameter

const int cold = 75; //set cold parameter

int Buzz= 8; // Define Buzzer 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); //red
pinMode(3, OUTPUT); //green
pinMode(4, OUTPUT); //blue
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);
}
}
```