Credit Name: CSE2140 2nd Language Programming

Assignment Name: Hot Or Cold

How has your program changed from planning to coding to now? Please explain?

In the main method I created objects for the temperature sensor and the red and green LEDs, using a class to gather information from the phigets.

```java
public static void main(String[] args) throws Exception
{
    //Create a temperature sensor object
    TemperatureSensor temperatureSensor = new TemperatureSensor();
    //Create objects for red and green LEDs
    DigitalOutput redLED = new DigitalOutput();
    DigitalOutput greenLED = new DigitalOutput();
```

Addressed each object, telling the program which port to find it, setting the setIsHubPortDevice as true.

```java
//Address objects
redLED.setHubPort(1);
redLED.setIsHubPortDevice(true);
greenLED.setHubPort(4);
greenLED.setIsHubPortDevice(true);
```

Opened a connection between the program and the physical device. Will timeout if after 1 sec(1000 miliseconds) and throw execption if it cannot locate the device.

```java
//Connect program to device
redLED.open(1000);
greenLED.open(1000);
temperatureSensor.open(1000);
```

If the temperature from the temperature sensor is between 20 to 24 degrees celcius, it will flash the green LED by setting the green LED's state as true, leaving the light on for 2.5 seconds using Thread.sleep and then setting its state as false to turn it off, waiting 1 second before continuing to the rest of the code. If the temperature is not in between the range, it will flash the red LED instead.

```java
//If, else statement to see if the temperature is between a range
if (temperatureSensor.getTemperature() >= 20 && temperatureSensor.getTemperature() <= 24)
{
    //Flash green LED if between range
```

```java
        greenLED.setState(true);
        Thread.sleep(2500);
        greenLED.setState(false);
        Thread.sleep(1000);
    }
    else
    {
        //Flash red LED if outside of range
        greenLED.setState(true);
        Thread.sleep(2500);
        greenLED.setState(false);
        Thread.sleep(1000);
    }
```

Displayed the exact temperature to 2 decimal places to the user.

```java
//Display temperature to user
System.out.print("The temperature is: " + temperatureSensor.getTemperature() + "°C");
```