225 Building Environment Report

NEU Seattle Devs (Hot Sauce)

2025-02-25

1 Basic Monitoring Information

1.1 Sensor Details

```
Sensor Information:
=====================================
Sensor # 3:
  Date: 2/25/2025
  Time Range: 8:30:20 - 12:15:01
  Location: Floor-1
  Sensor Status: OK
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Sensor # 5:
  Date: 2/25/2025
  Time Range: 8:30:20 - 12:15:01
  Location: Floor-2
  Sensor Status: OK
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```

1.2 Environmental Monitoring Chart

2 Environmental Monitoring Charts

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Multi-sensor environmental monitoring charts saved in 'charts/'.
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2.1 Sensor Comparison Charts

2.1.1 Temperature Comparison

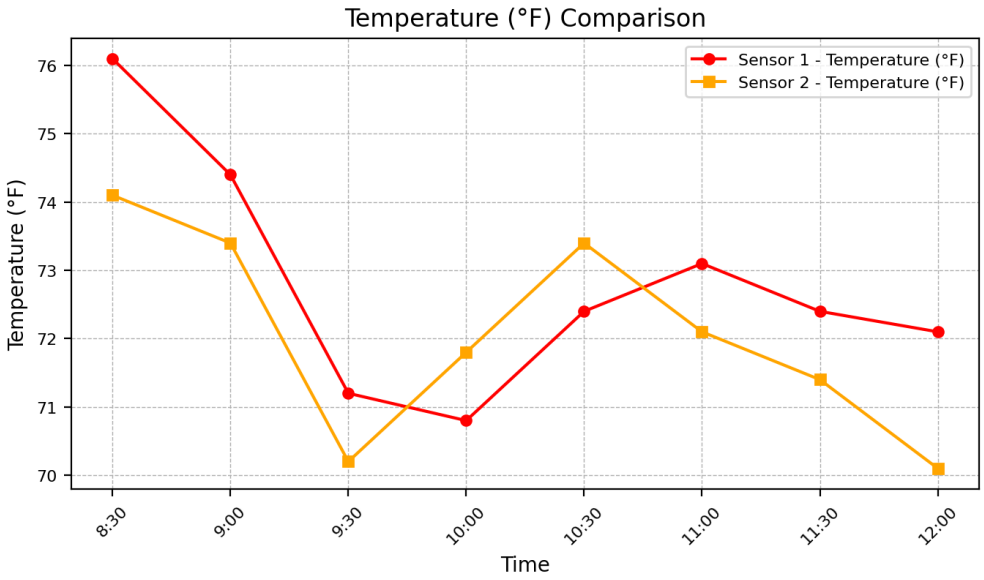

Figure 1: Temperature Comparison

2.1.2 Humidity Comparison

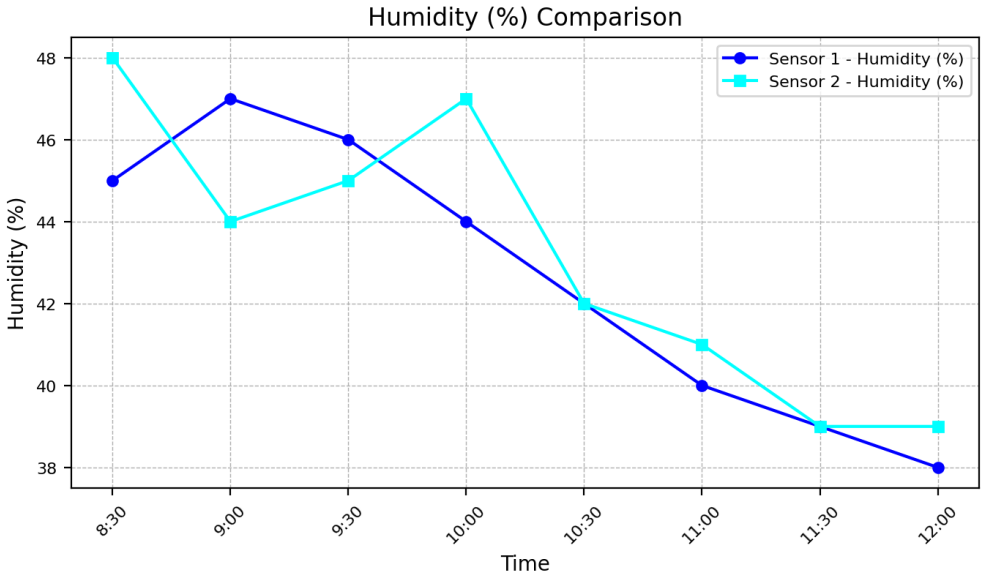

Figure 2: Humidity Comparison

2.1.3 CO2 Comparison

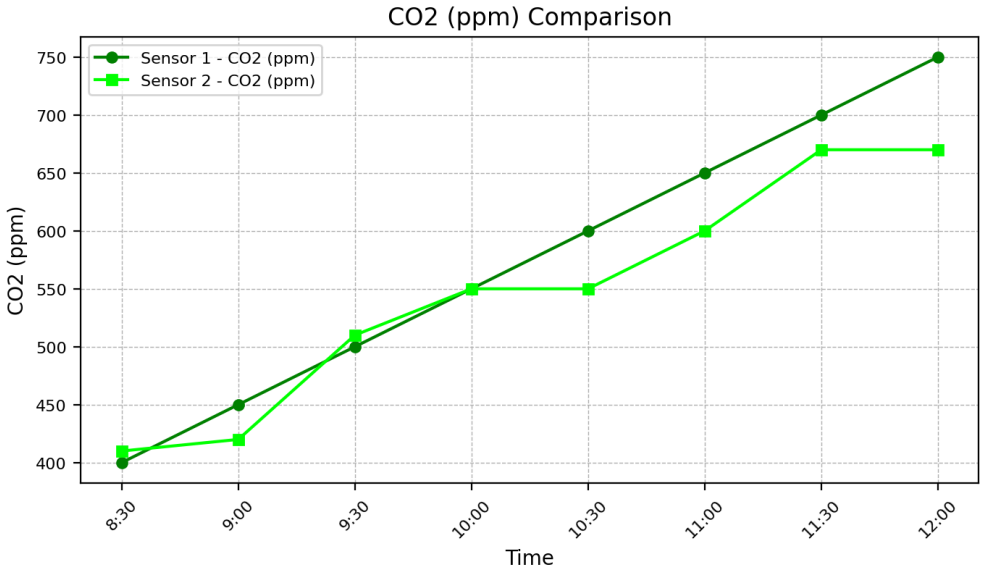

Figure 3: CO2 Comparison

2.1.4 VOC Comparison

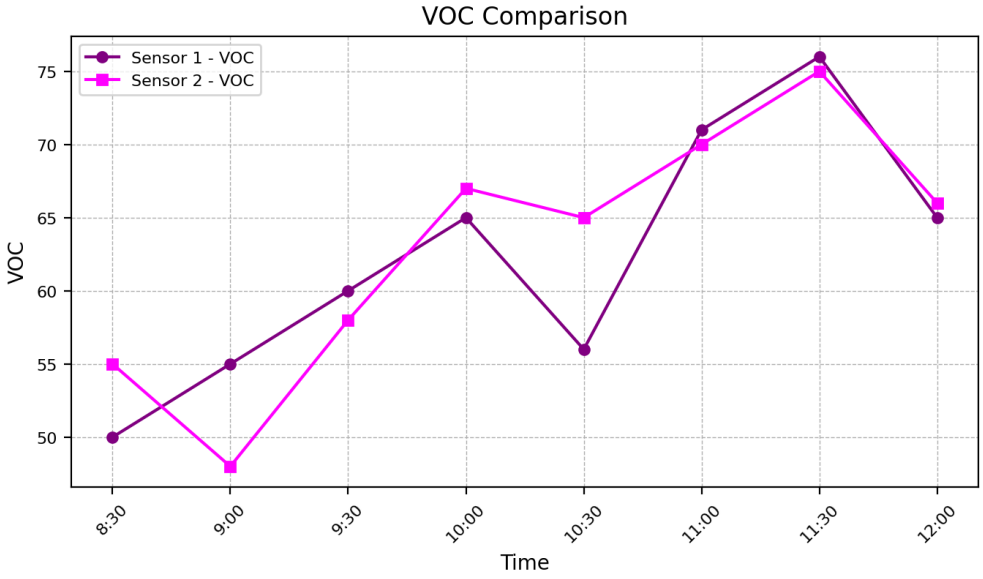

Figure 4: VOC Comparison

2.2 Data Insights

- **Temperature**: Ranging from 22.5°C to 25.6°C
- **Humidity**: Ranging from 45% to 38%

- **CO2 Levels**: Ranging from 400 ppm to 750 ppm
- **VOC Levels**: Ranging from 50 to 85

3 Comfort Level

Comfort Scores

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Comfort Score: 88.31 (Good)
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Comfort Levels

- Excellent (90-100) – Ideal indoor environment
- Good (75-89) – Comfortable but slightly off-optimal
- Moderate (50-74) – Some discomfort noticeable
- Poor (25-49) – Significant discomfort or air quality concerns
- Unacceptable (0-24) – Unhealthy indoor conditions

Comfort Categories

1. Temperature (°F) – Ideal indoor temperatures typically range between 69.8°F and 77°F for comfort.
2. Humidity (%) – Optimal indoor humidity falls between 40% and 60% to maintain comfort and air quality.
3. CO Levels (ppm) – Higher CO levels can indicate poor ventilation. Readings below 600 ppm are ideal, while values above 1000 ppm suggest poor air circulation.
4. VOC Levels – Volatile Organic Compounds (VOCs) affect air quality, with values below 50 considered excellent and those above 150 potentially harmful.

3.1 Anomaly Detection -> for later dev

- CO2 and VOC levels show steady increase
- Potential indicators:
  - Increased occupancy
  - Reduced ventilation
  - Ongoing activities in the monitored space

4 Sensor Specification

- **Sensor Models**: ESP8266, PMS5003(PM2.5), SHT31-D(Temp/Hum), S8(CO2)
- **Calibration Date**: January 15, 2025
- **Sampling Interval**: 5 minutes