225 Building Environment Report

NEU Seattle Devs (Hot Sauce)

2025-02-25

1 Basic Monitoring Information

1.1 Sensor Details

```
Sensor Information:
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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/'.
```

2.1 Sensor Comparison Charts

2.1.1 Temperature Comparison

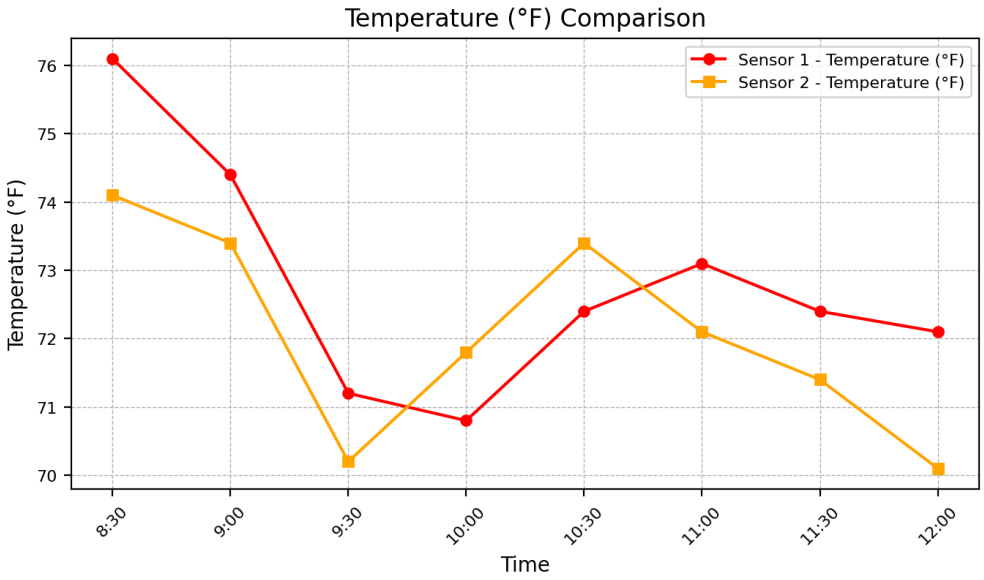

Figure 1: Temperature Comparison

2.1.2 Humidity Comparison

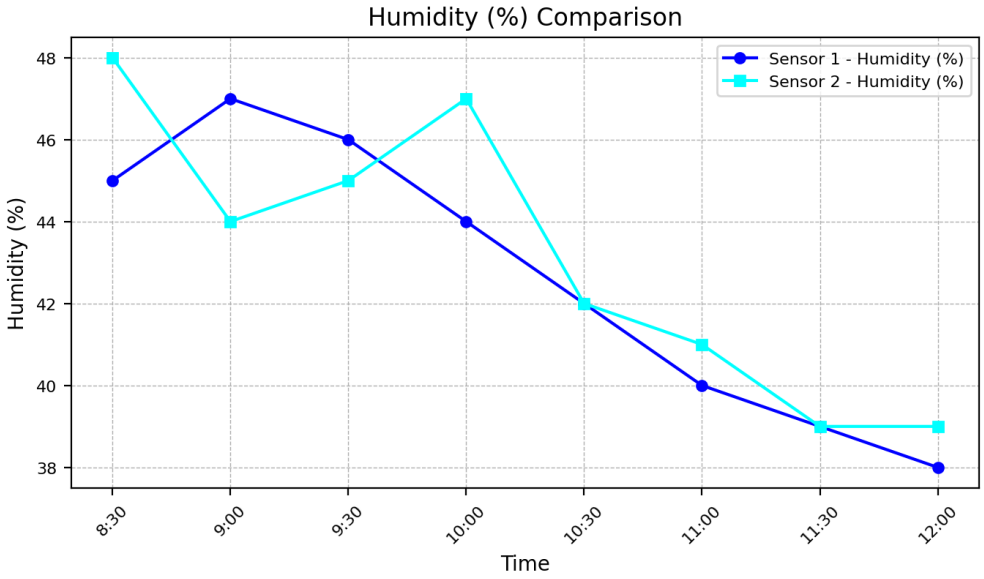

Figure 2: Humidity Comparison

2.1.3 CO2 Comparison

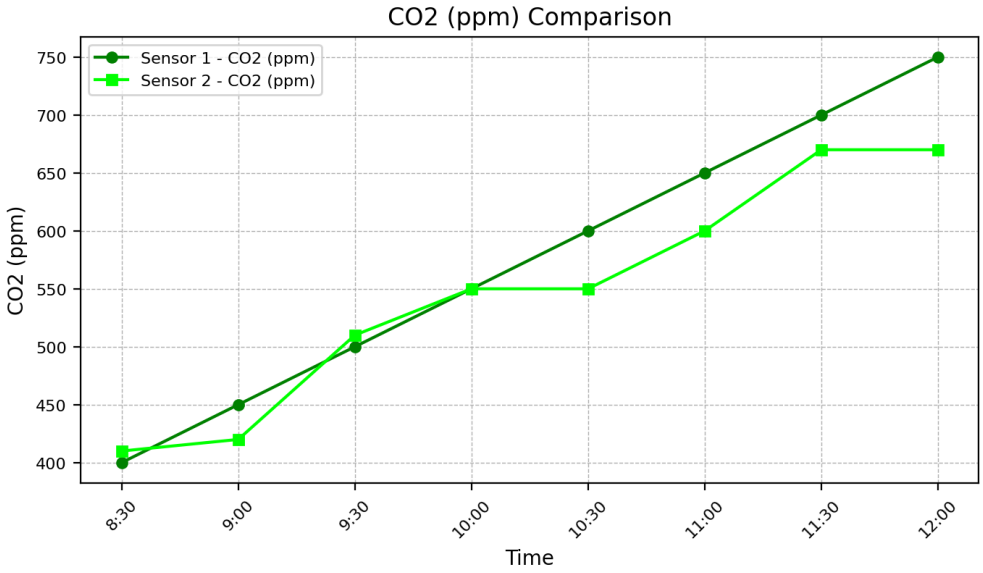

Figure 3: CO2 Comparison

2.1.4 PM 2.5 Comparison

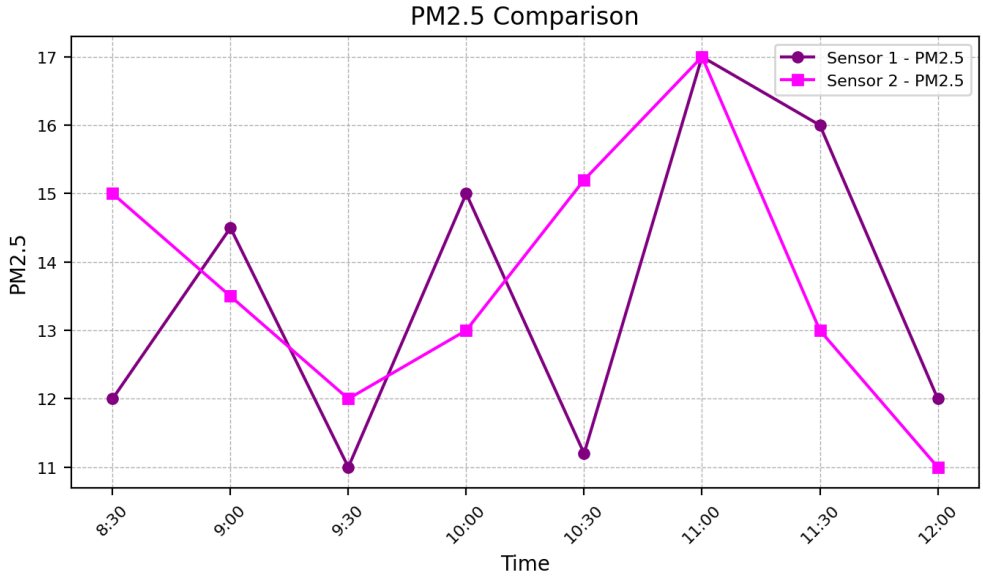

Figure 4: PM2.5 Comparison

2.2 Data Insights

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**Temperature**: ranging from 70.8° F to 76.1° F
**Humidity**: ranging from 70.8° F to 76.1° F
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**CO2 Levels**: ranging from 70.8° F to 76.1° F
**PM 2.5 Levels**: ranging from 70.8° F to 76.1° F
```

3 Comfort Level

Comfort Scores

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Indoor Comfort Scores: 91.21
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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 70°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. PM 2.5 (µg/m³) – Ideal indoor PM 2.5 levels should remain below 12 µg/m³. Levels exceeding 35 µg/m³ are considered unhealthy, especially for sensitive groups.

3.1 Anomaly Detection -> for later dev

- CO2 and PM2.5 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