

Detail description about sample data

how to download

Sample Data Description: The dataset utilized in this case study focuses on predictive maintenance of HVAC systems in a commercial building. It comprises 10 variables, each with its own unique significance. The dataset was retrieved from Mendeley Data (refer Appendix A),:

1. Return Air Temperature(°C) :This variable represents the temperature of the air being returned to the HVAC system. It helps in covering the thermal conditions within the structure.
2. Supply Air Temperature(°C) This variable represents the temperature of the air being supplied by the HVAC system into the structure space. It indicates the effectiveness of the cooling or heating process
3. Outdoor Air Temperature(°C) This variable represents the temperature of the out-of-door air. It's a pivotal factor in determining the effectiveness of the HVAC system, especially for systems that incorporate out-of-door air for ventilation or cooling purposes.
4. Return Air Humidity() This variable represents the relative moisture of the air being returned to the HVAC system. It provides perceptivity into the humidity content within the structure .
5. Supply Air Humidity() This variable represents the relative moisture of the air being supplied by the HVAC system. It indicates the position of moisture control achieved by the system.
6. Outdoor Air Humidity() This variable represents the relative moisture of the out-of-door air. It helps in assessing the out-of-door air's impact on the HVAC system's performance and the inner terrain.
7. Return Air Temperature Setpoint(°C) This variable represents the asked temperature setpoint for the return air. It serves as a reference for comparing the factual return air temperature and assessing the system's performance.

8. Humidifier Saturation Temperature(°C) This variable represents the achromatism temperature in the humidifier, which is used to control the moisture position in the structure. It provides perceptivity into the humidification process.

9. Fan Power(kW) (Power)This variable represents the power needed by the suckers in the HVAC system. It indicates the energy consumption associated with the addict operation.

10. Fan Energy(kWh)(Energy) :This variable represents the energy needed by the suckers in the HVAC system over a specific period. It provides an overall measure of addict energy consumption.

11. Maintanance_Needs: The "Maintenance_Needs" variable represents whether maintenance is needed (1) or not needed (0)

The sample data provides a comprehensive set of variables that capture important aspects of HVAC system operation, including temperature, moisture, and setpoints,. These variables enable analysis and modeling to identify patterns, anomalies, and implicit faults within the system. Using this sample data, we can gain insight into the HVAC system's performance, identify deviations from normal operating conditions, and develop predictive conservation models that can predict failures and optimize conservation schedules.Originally we retrieved the data from the website (refer Appendix A).

However we dont really utilize the exact data from the provided dataset instead we create a dummy dataset but fulfill our case study requirement that now consisting 132 instances.

This is step to download our created dummy dataset :

- 1.) Together with the report, there is attachment called “HVAC (Dummy Data)” where it store all raw data that is yet to be preprocessed inside Weka tools. This data converted into csv commas where Weka can read and do the preprocesing
- 2.) Click the attachment and ,can view all the new instances but with same attributes as original data from the website.