Corbon Monoxide Prediction

Problem Statements:

Carbon monoxide (CO) is a dangerous gas that can have serious health impacts when present in high concentrations. Monitoring and predicting CO levels is essential for public health and safety in various environments. Environmental factors like temperature and humidity, along with temporal patterns, influence CO levels. By developing predictive models using these factors, we can forecast CO concentrations and take preventive actions.
Develop a machine learning model to predict hourly carbon monoxide (CO) levels using temperature, humidity, and time-based features. The goal is to provide accurate short-term forecasts to enable timely interventions and mitigate health risks associated with elevated CO levels.

scenario 1: Urban Air Quality Management
In an urban environment, various sources such as traffic, industrial activities, and residential heating contribute to CO emissions. The city government aims to use predictive modeling to forecast CO levels based on temperature, humidity, and time of day. This will help issue timely air quality alerts and implement measures to reduce CO exposure among residents.

scenario 2: Industrial Site Safety Monitoring
In an industrial setting, CO emissions from combustion processes and machinery pose significant safety risks. The management team of a manufacturing plant aims to predict CO levels inside the facility using temperature, humidity, and operational schedules. This predictive capability will enable timely activation of safety measures, such as ventilation or evacuation, to protect workers.