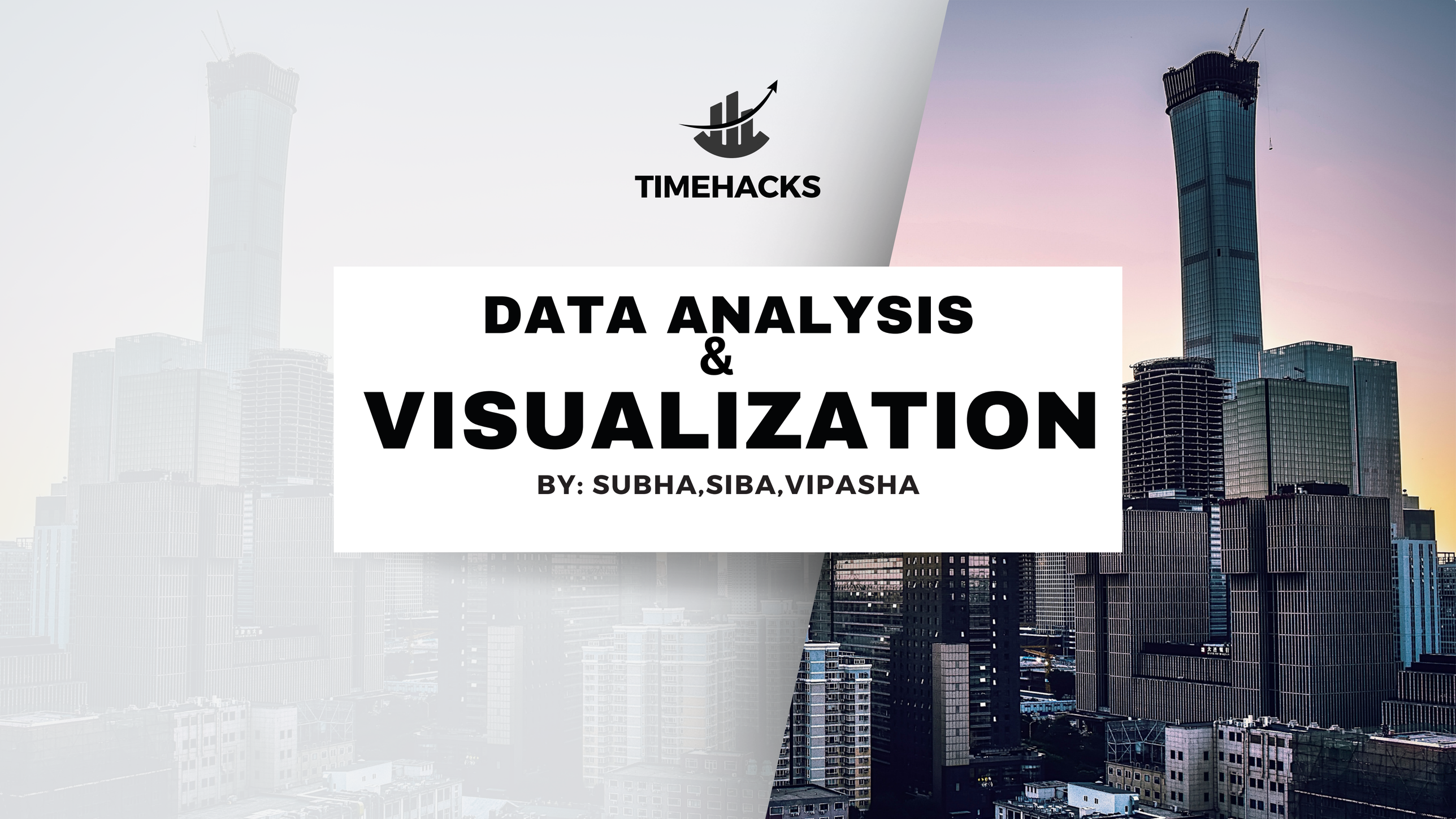
TIMEHACKS

DATA ANALYSIS & VISUALIZATION

BY: SUBHA,SIBA,VIPASHA



DATA CLEANING

- CHECKED FOR N/A,ZERO,NULL
- NO NOISY DATA WERE FOUND
- AS PER THE TASK CHECKED AND REPLACED THE VALUES THAT WERE CONSTANT FOR >5MIN

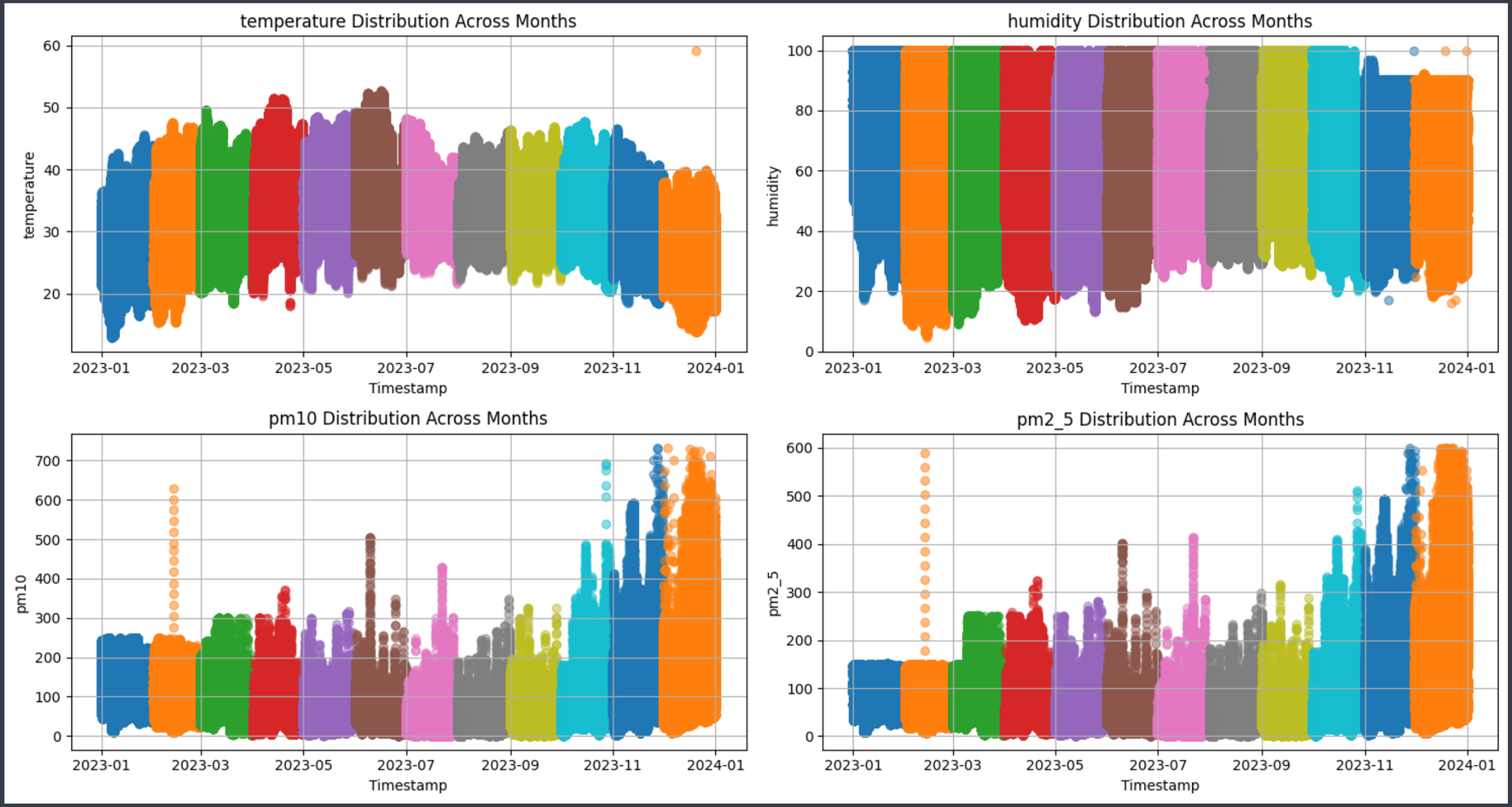
DATA PREPROCESSING

In the data preprocessing method talilored for environmental sensor data, focusing on identifying and handling constant readings that may indicate sensor anomalies. It processes data for variables such as temperature, humidity, PM10, and PM2.5 by detecting periods where sensor readings remain unchanged for extended intervals (more than 5 consecutive readings). These constant values are then replaced with zeros, flagging them for further investigation or special treatment in analysis.

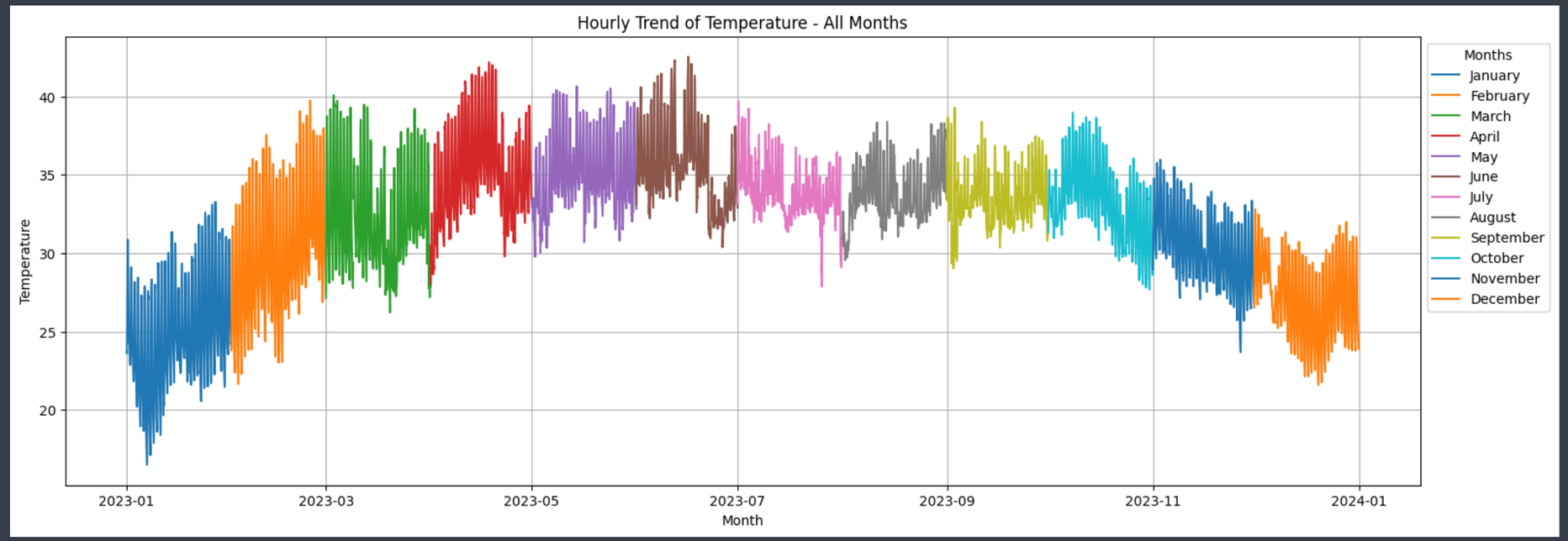
Key steps include:

- Sorting data chronologically by timestamp to accurately track changes over time.
- Detecting unchanged intervals by calculating differences between consecutive readings, identifying when these differences are zero, and grouping these occurrences.
- Identifying and replacing constants by applying functions that set the values of long-unchanged intervals to zero, thereby mitigating potential data quality issues.
- Processing each device separately to ensure that modifications are applied accurately across devices with potentially varying data characteristics.
- Reassembling the processed data into a single DataFrame for subsequent analysis.

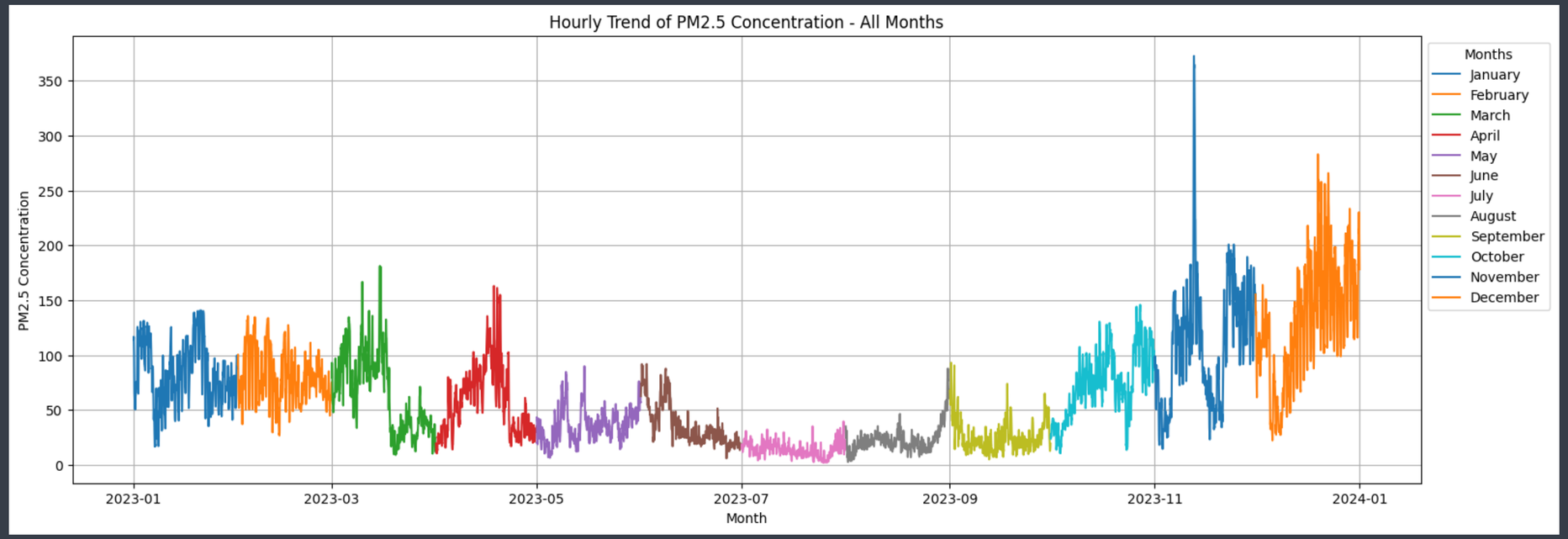
DATA VISUALISATION



DATA VISUALISATION



DATA VISUALISATION



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