Analysis of Atmospheric Data

Mir Raisul Islam
Amit Ranjan Kar

Study Area: New Delhi, India

Data Set: 2013-01-01 to 2017-04-24 (Daily Data)

Atmospheric Variables: Mean Temperature,
Pressure,
Wind Velocity,
Humidity

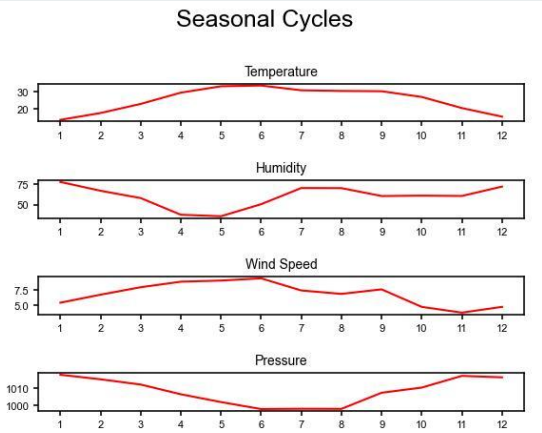
Tools: Python (Numpy, Pandas, Matplotlib, Seaborn)

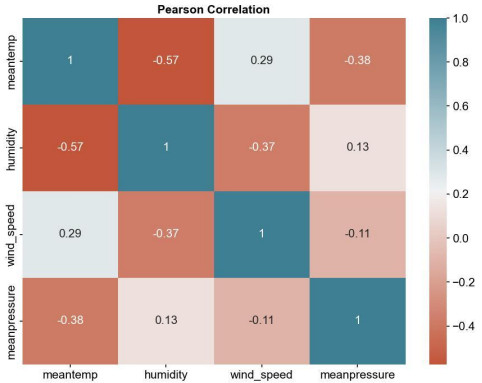
Analysis Questions

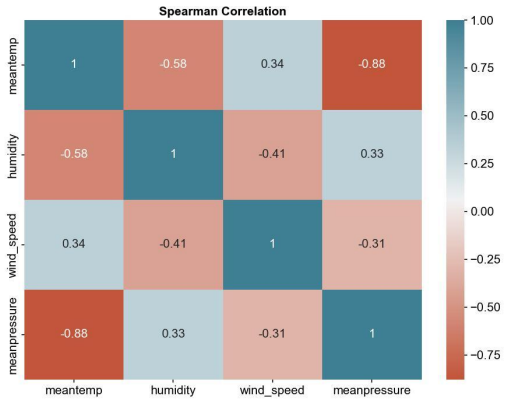
1. When do the values of the variables get higher and lower?
2. Are there any strong correlations between variables?

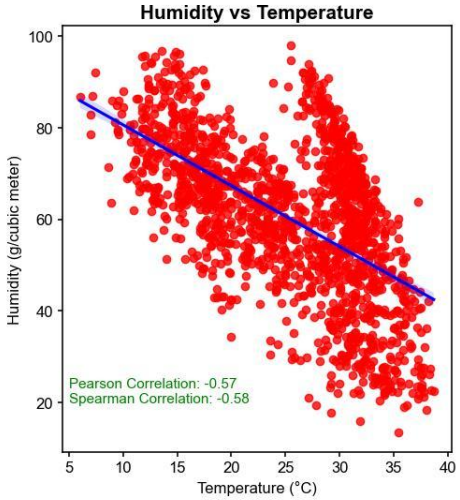
Data Cleaning and Transformations

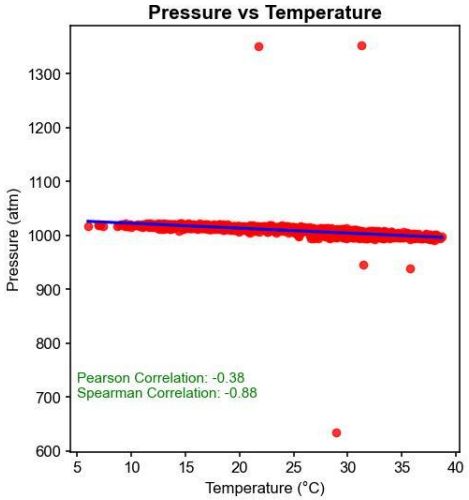
- No null value
- Few unnatural values/ outliers
- No duplicate value
- Two datasets were merged
- Column “date”: from object to datetime64


Seasonal Cycles
Temperature
Humidity
Wind Speed
Pressure


Pearson Correlation
meantemp
humidity
wind_speed
meanpressure


Spearman Correlation
meantemp
humidity
wind_speed
meanpressure


Humidity vs Temperature
Humidity (g/cubic meter)
Temperature (°C)
Pearson Correlation: -0.57
Spearman Correlation: -0.58


Pressure vs Temperature
Pressure (atm)
Temperature (°C)
Pearson Correlation: -0.38
Spearman Correlation: -0.88

Thank you