



Tech Assessment

Aditya Singh Thakur




Objective

- Analyze the "Global Weather Repository.csv" dataset to forecast future weather trends and showcase data science skills through both basic and advanced techniques. This dataset provides Daily weather information for cities around the world. This dataset offers a comprehensive set of features that reflect the weather conditions worldwide. It includes over 40 features.



PM Accelerator Mission

- By making industry-leading tools and education available to individuals from all backgrounds, we level the playing field for future PM leaders. This is the PM Accelerator motto, as we grant aspiring and experienced PMs what they need most – Access. We introduce you to industry leaders, surround you with the right PM ecosystem, and discover the new world of AI product management skills.
- 

Dataset

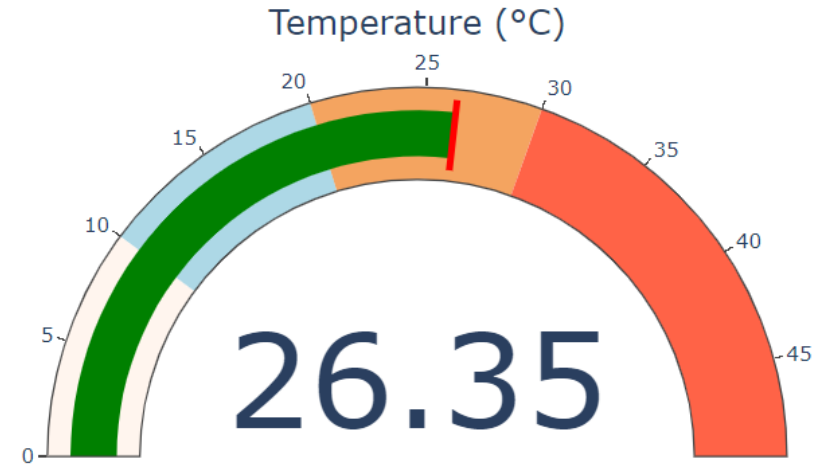
The dataset consists of 24052 entries and 41 columns, which include features such as temperature, wind speed, humidity and air quality indicators.

There are no missing values, indicating the dataset is complete and ready for analysis



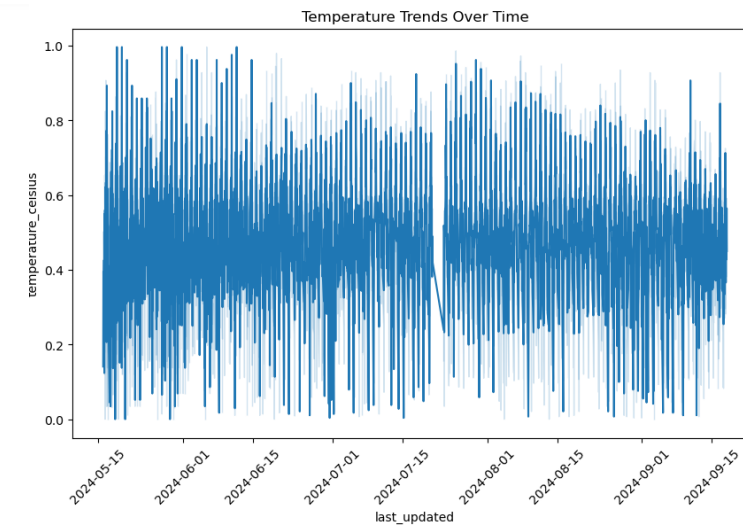
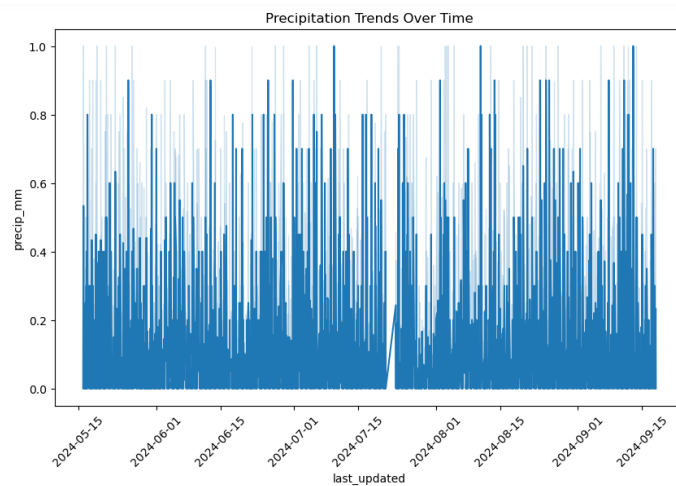
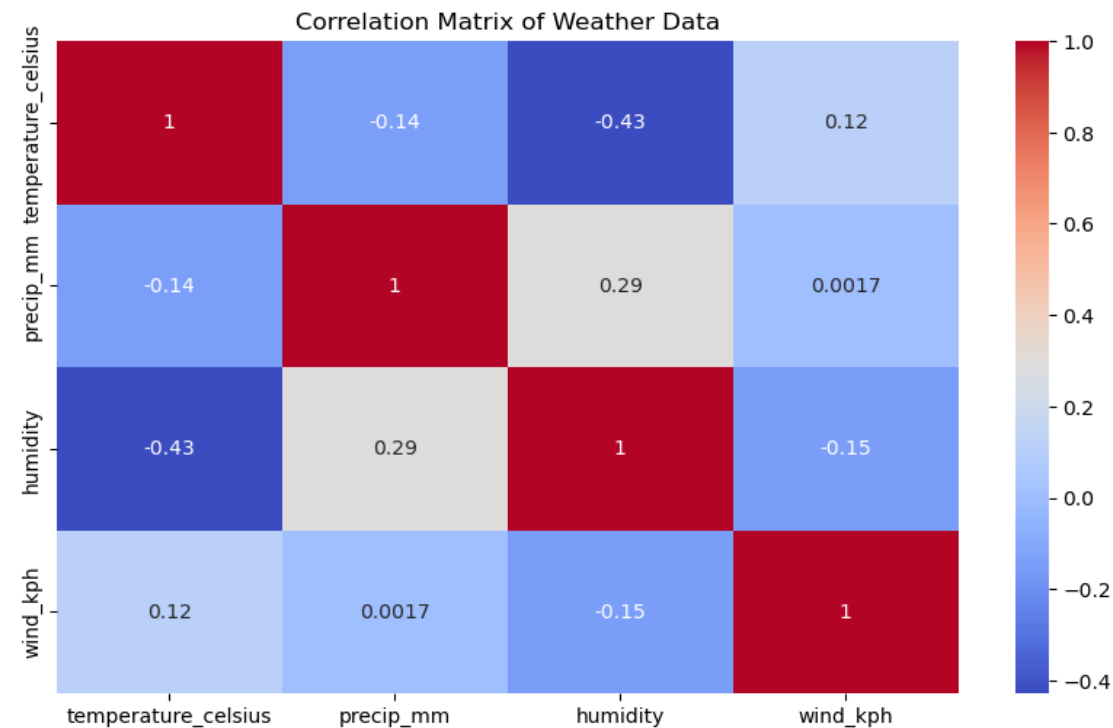
Understanding the data

Temperature Status

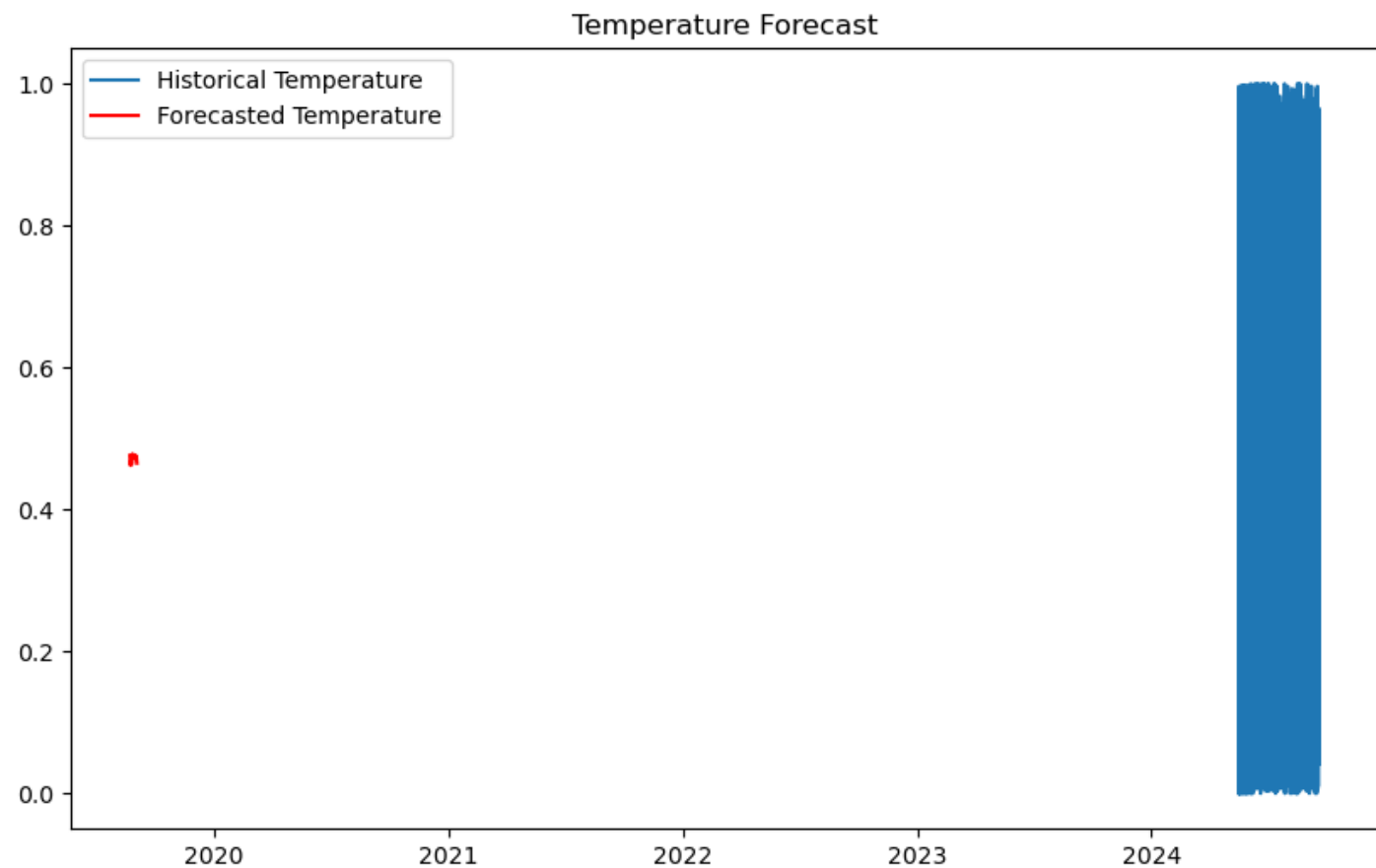


- This is an interactive gauge chart that shows the average temperature with different color ranges to indicate different temperature levels and a threshold line to highlight the average temperature value.

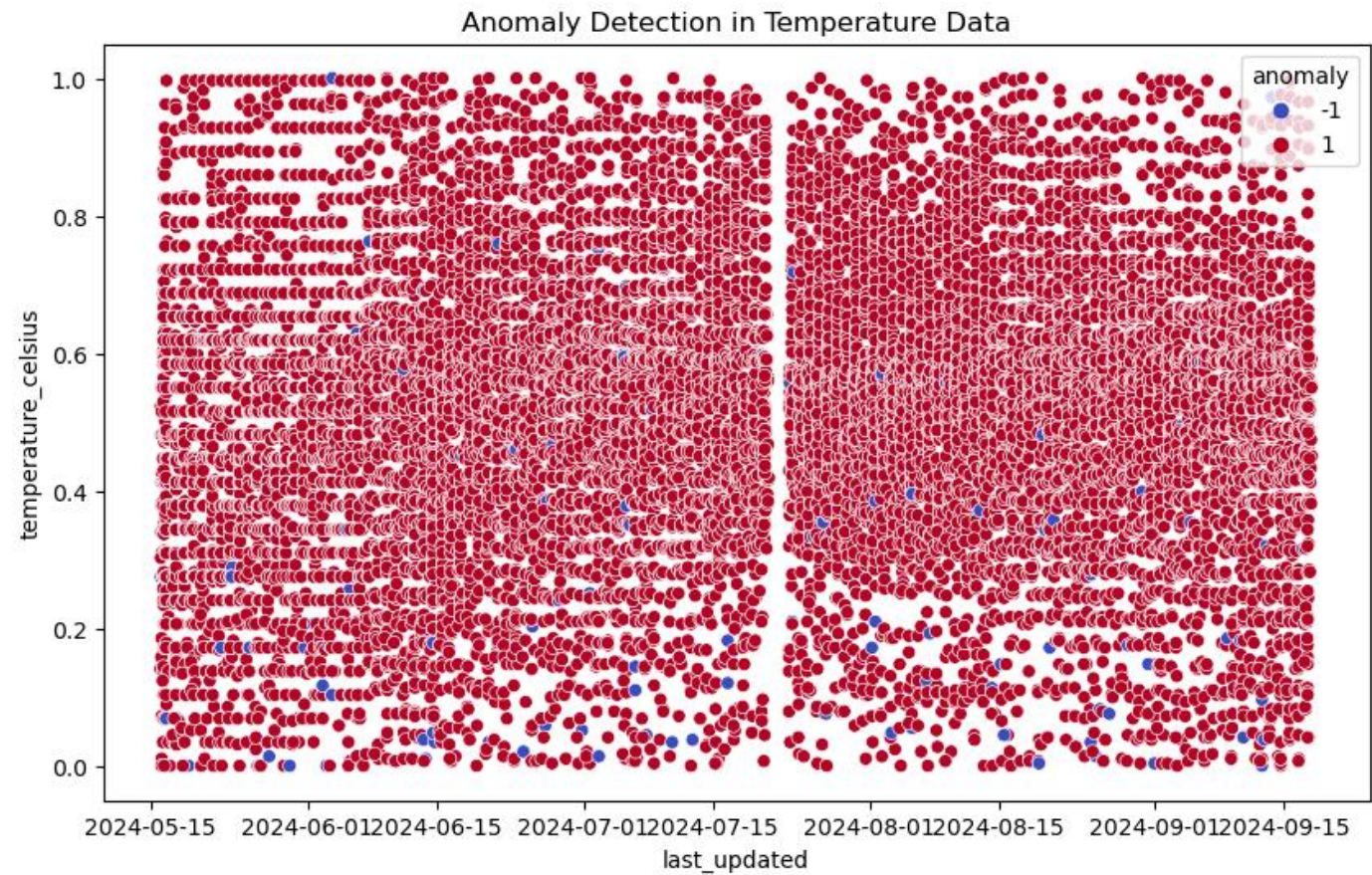
- A line chart showing temperature trends over time. A line chart depicting precipitation trends over time. A heatmap of the correlation matrix for temperature, precipitation, humidity, and wind speed to reveal relationships between these variables.



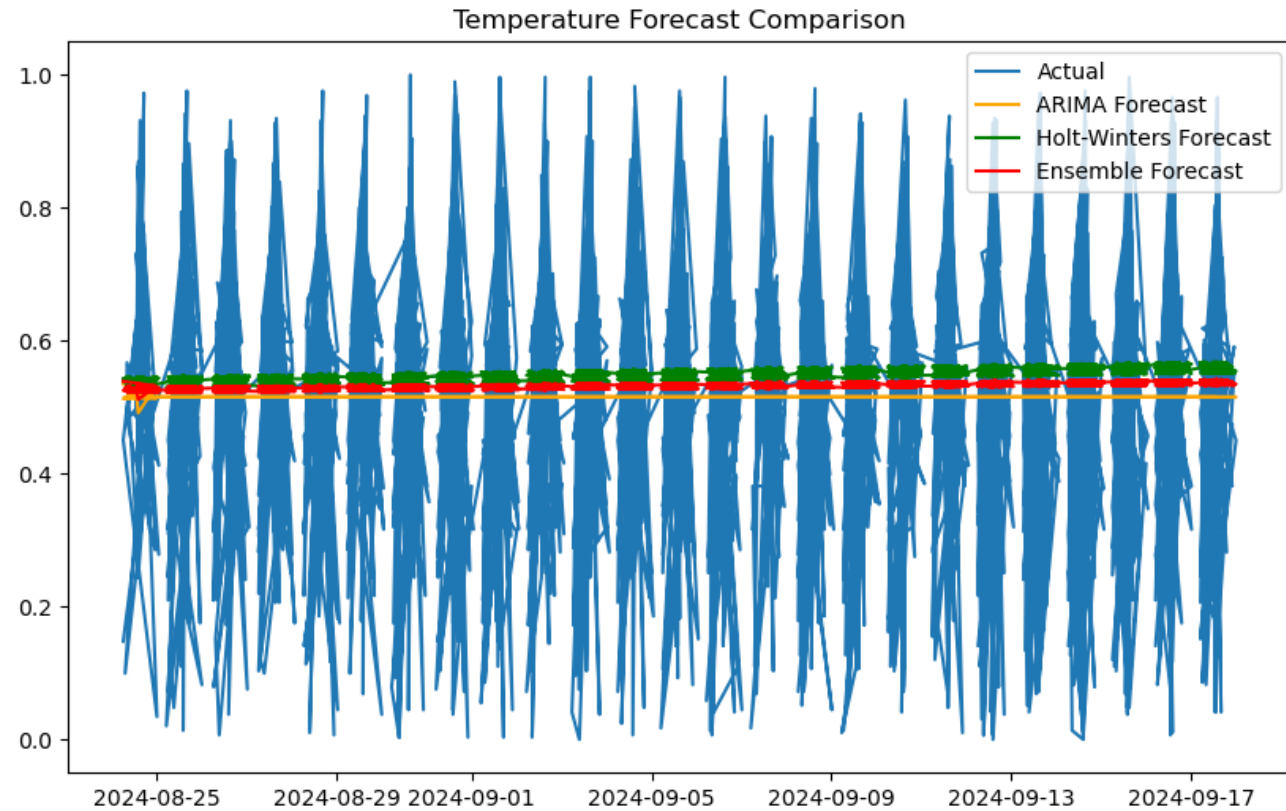
Time series
forecasting
using the
Holt-Winters
method



Anomaly Detection



Comparison



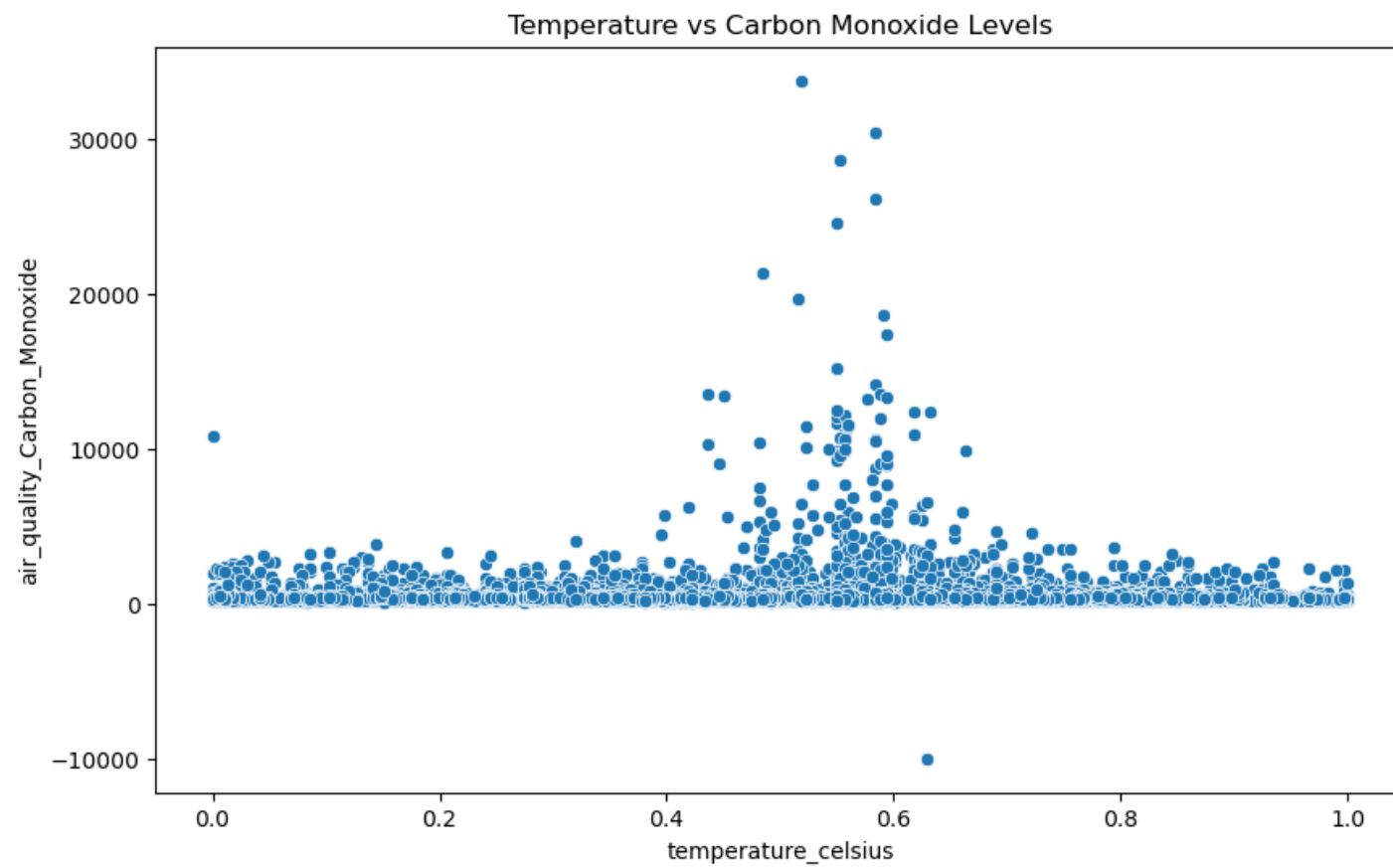
ARIMA RMSE: 0.1894964094694121
Holt-Winters RMSE: 0.19318236996428273
Ensemble RMSE: 0.19055208252934283



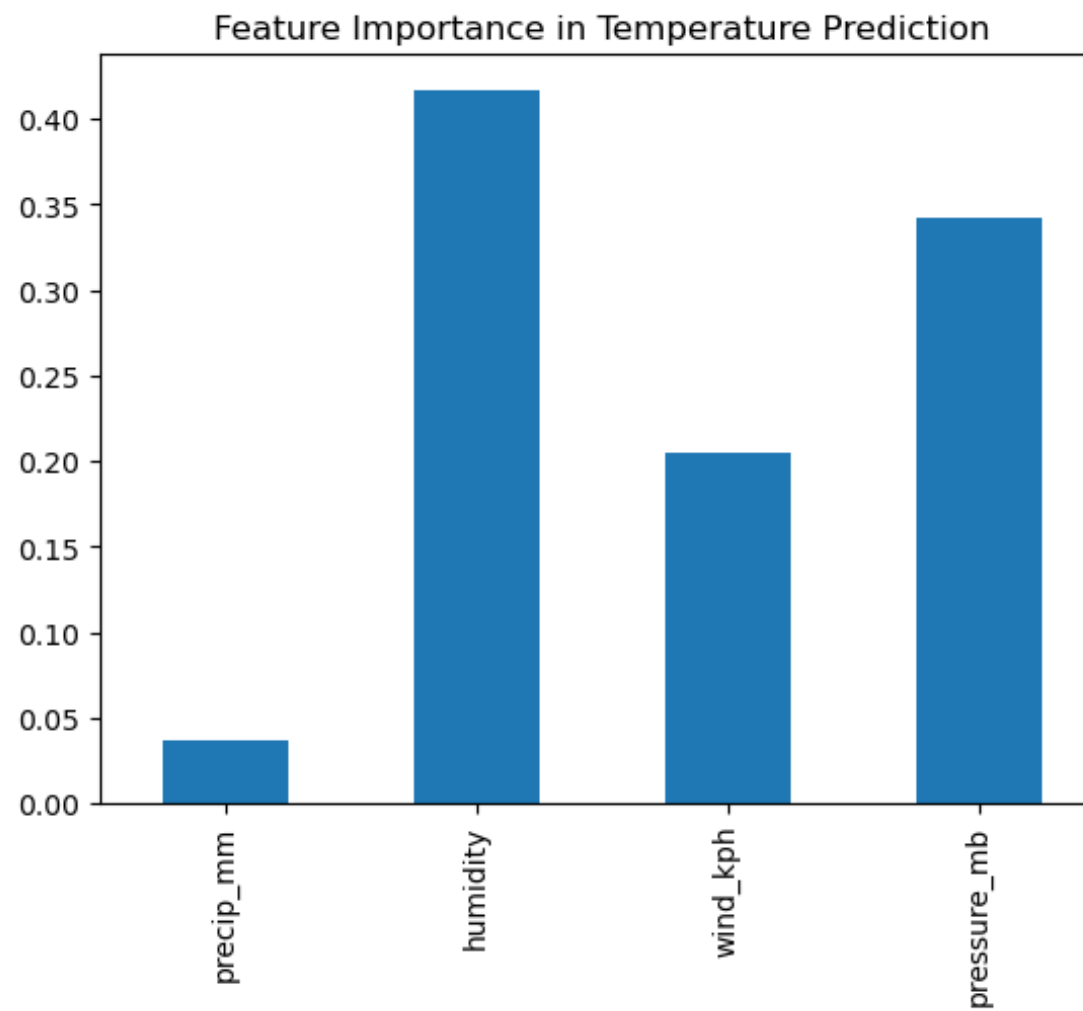
Results

- A lower RMSE indicates better accuracy. This means the ARIMA performs better than the Holt-Winters model.

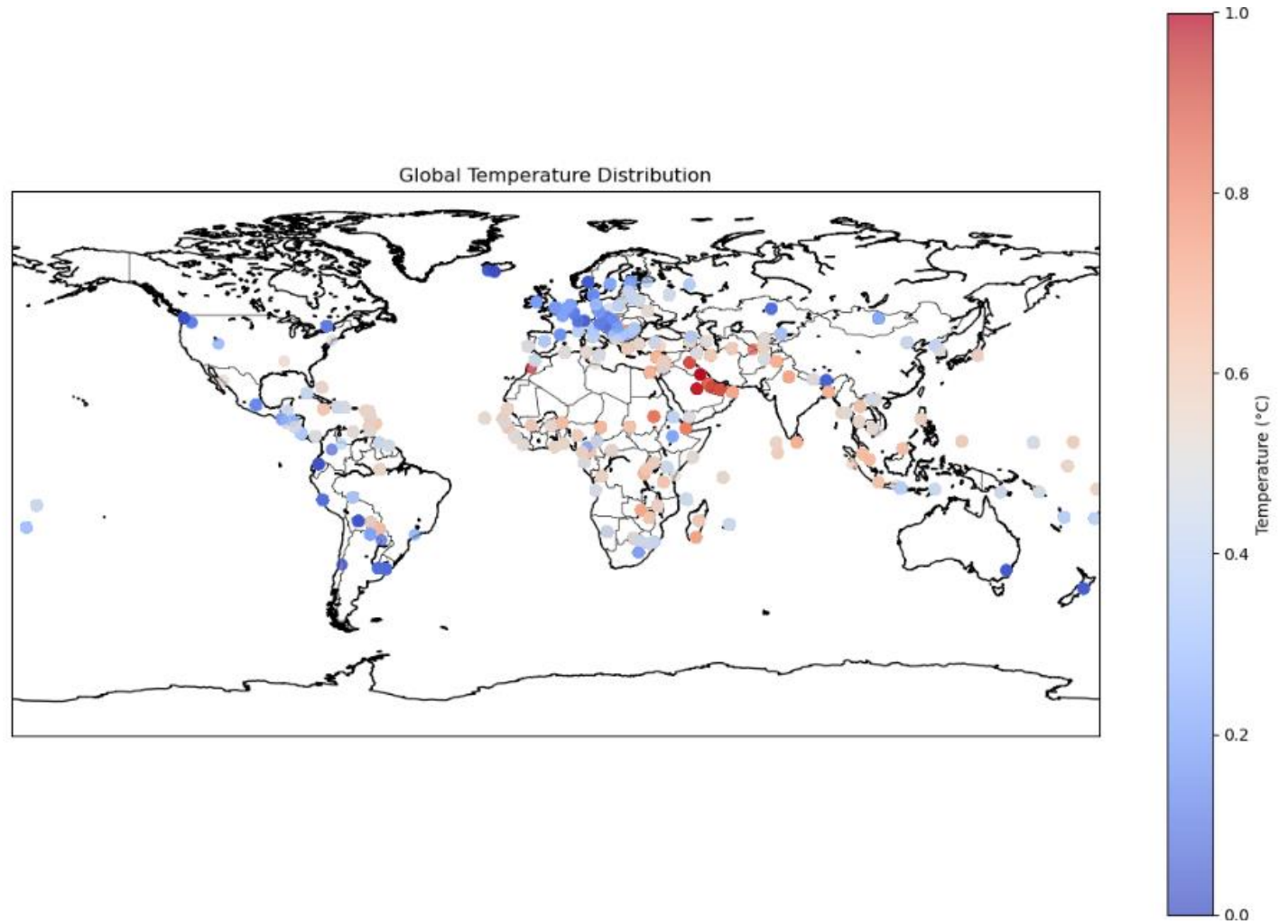
Environmental Impact



Feature Importance

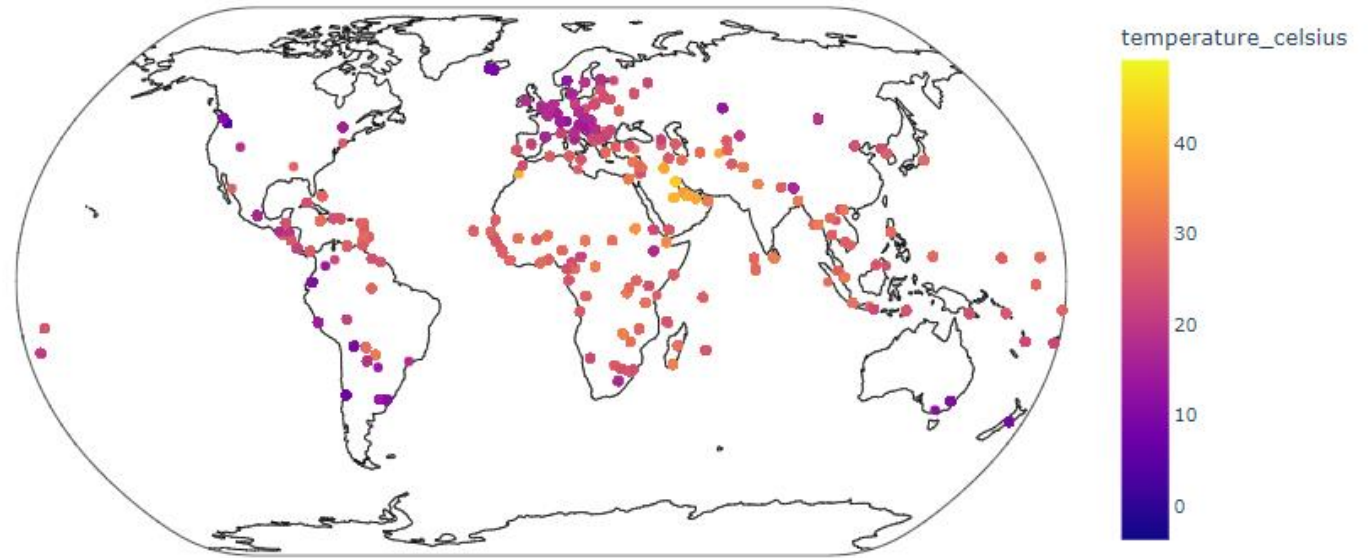


Spatial Analysis



Global Temperature HeatMap

Interactive Global Temperature Heatmap





Thank you