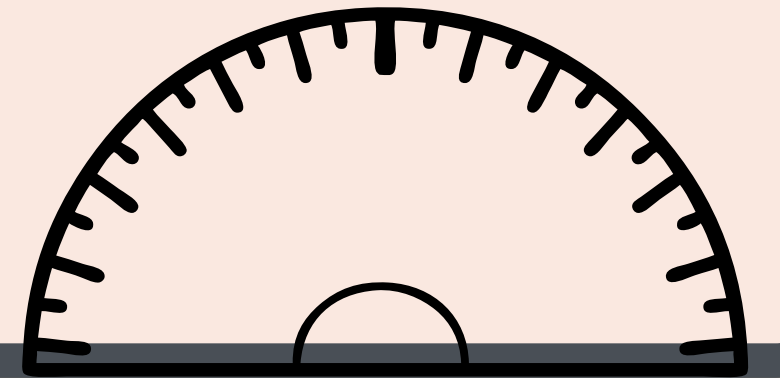
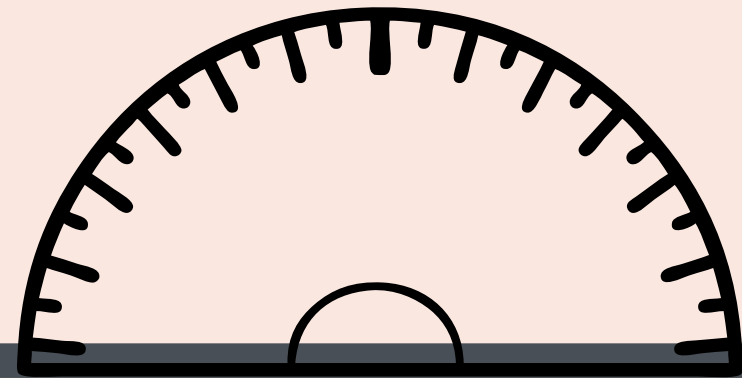
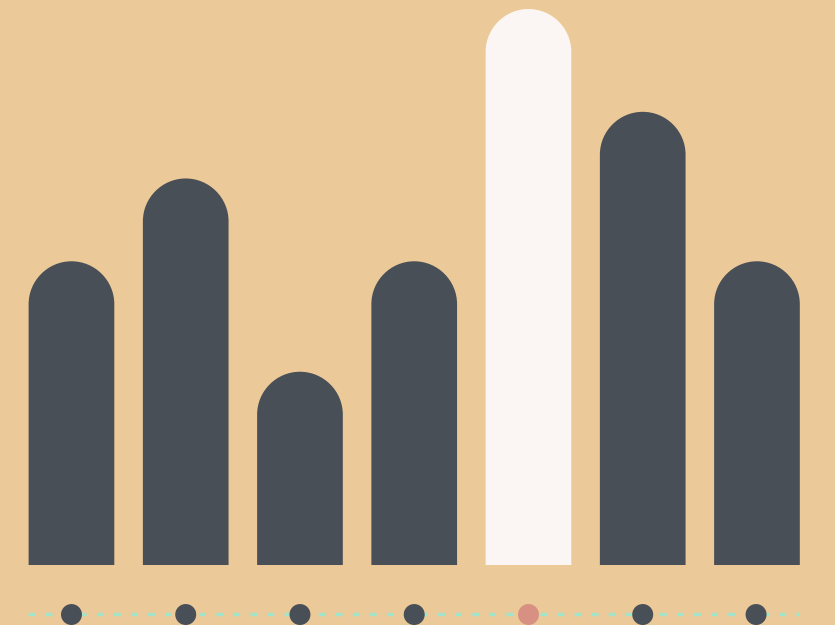
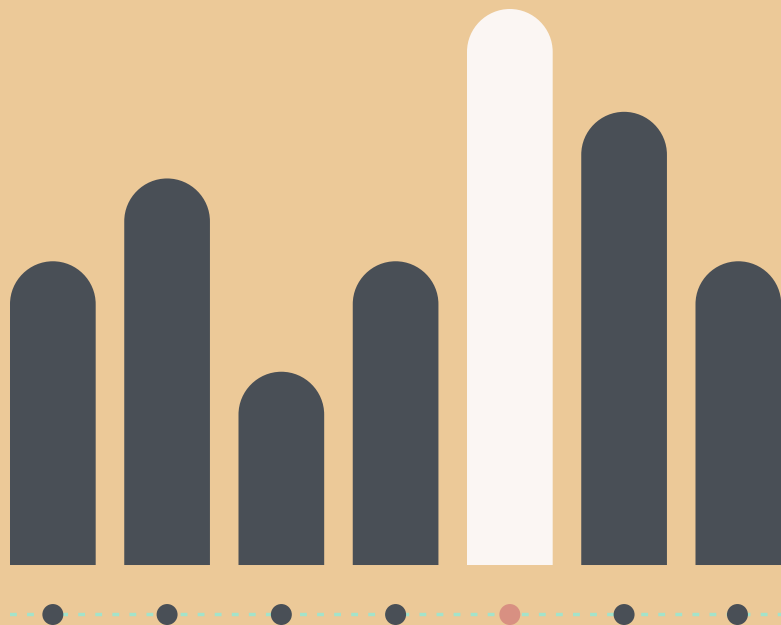


PROBABILITY PROJECT



TEAM MEMBERS

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ABSTRACT

Weather forecasting is the scientific process of predicting the atmospheric conditions at a specific time and location. The parameters used to analyze and predict the weather include temperature, wind, humidity, rainfall, and the size of the data set. Additionally, it involves examining current weather data, identifying patterns and trends, and utilizing various mathematical models to forecast future weather conditions. The data collected for analysis is obtained from a temperature and humidity sensor known as the DHT11 sensor. This data is then stored in the cloud in formats such as CSV, JSON, and XML files, which are utilized for further analysis and prediction.



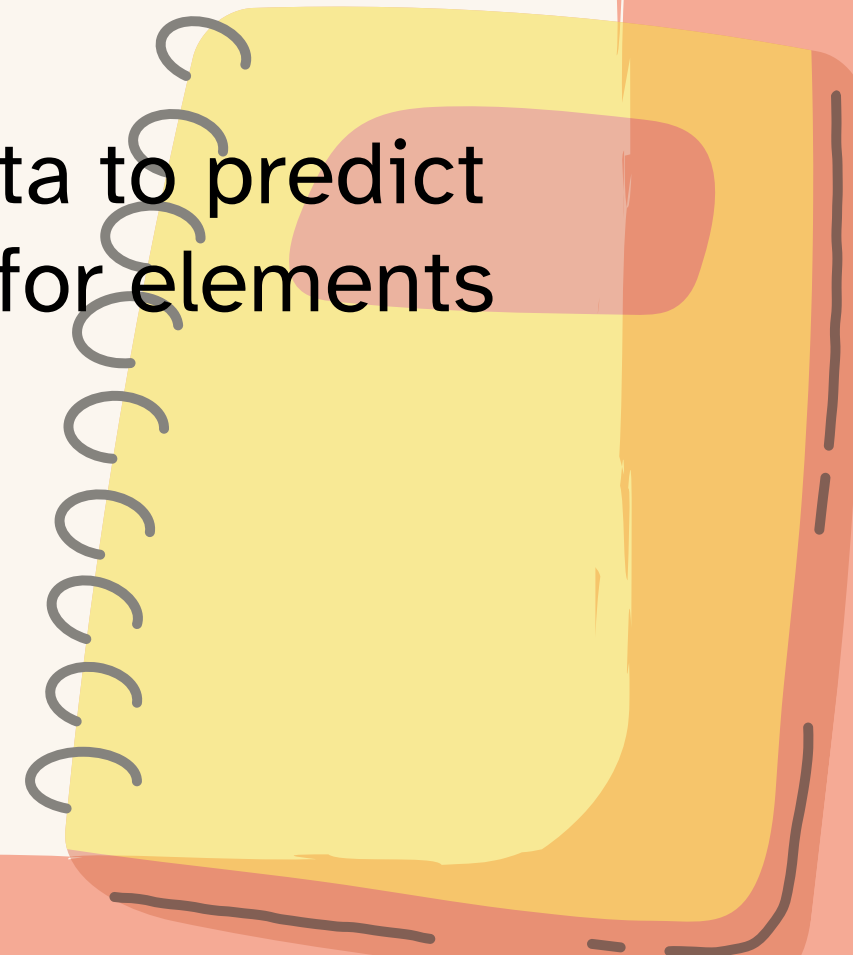
INTRODUCTION

Weather forecasting involves using the principles of physics along with statistical and empirical techniques to predict the weather. It not only predicts atmospheric phenomena but also changes in the Earth's surface climate caused by atmospheric conditions like snow, ice cover, storm tides, and floods. The demand for more accurate weather forecasts is increasing in modern society. Whether it's the general public planning a beach outing or an organization organizing a rally or an outdoor wedding reception, everyone relies on accurate weather forecasts. Industries such as airlines and fruit growers also heavily rely on weather predictions to plan their schedules and activities. In developed countries, even the designs of buildings and industrial facilities depend on a solid understanding of the atmosphere.

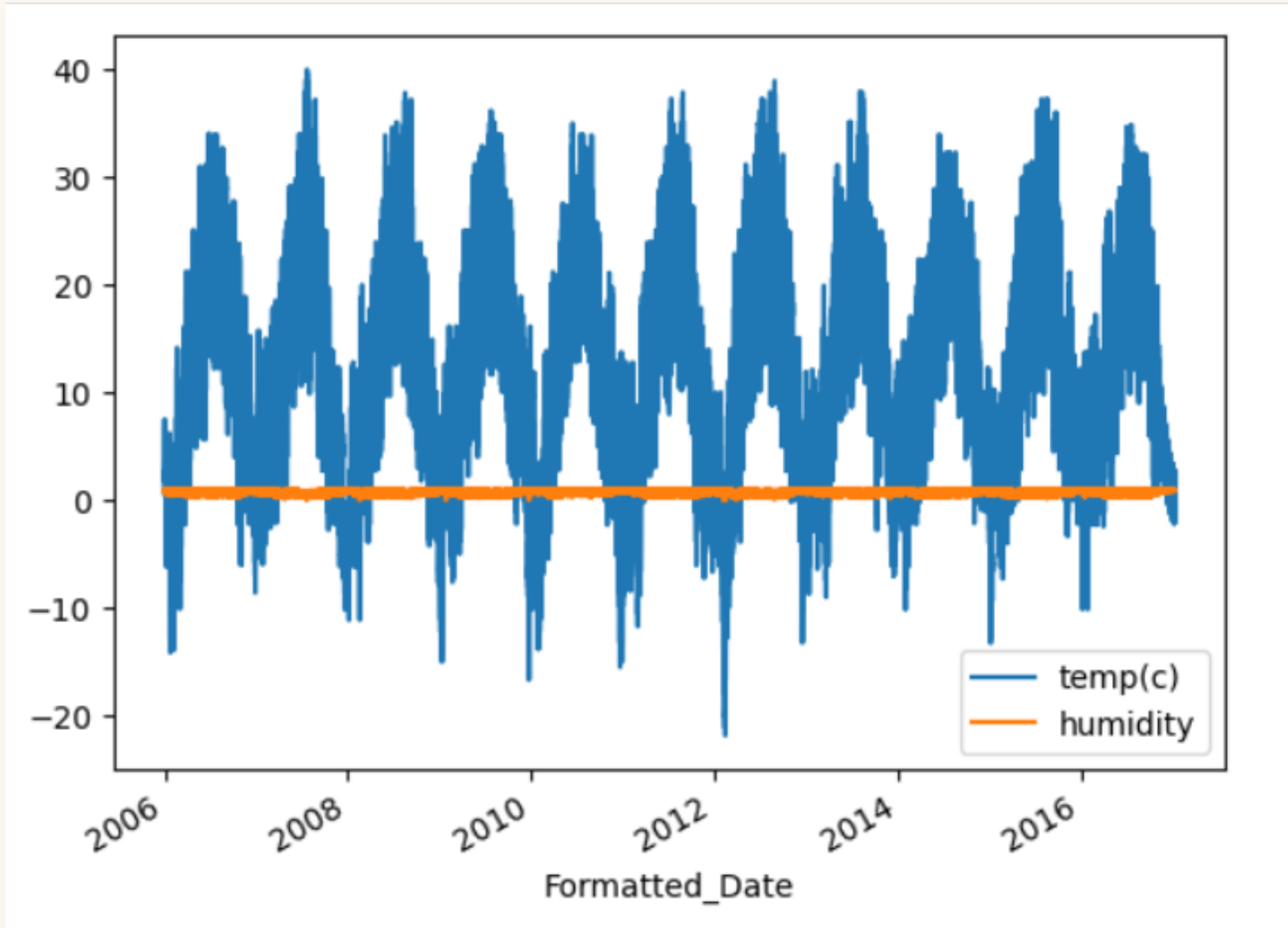


* METHODS

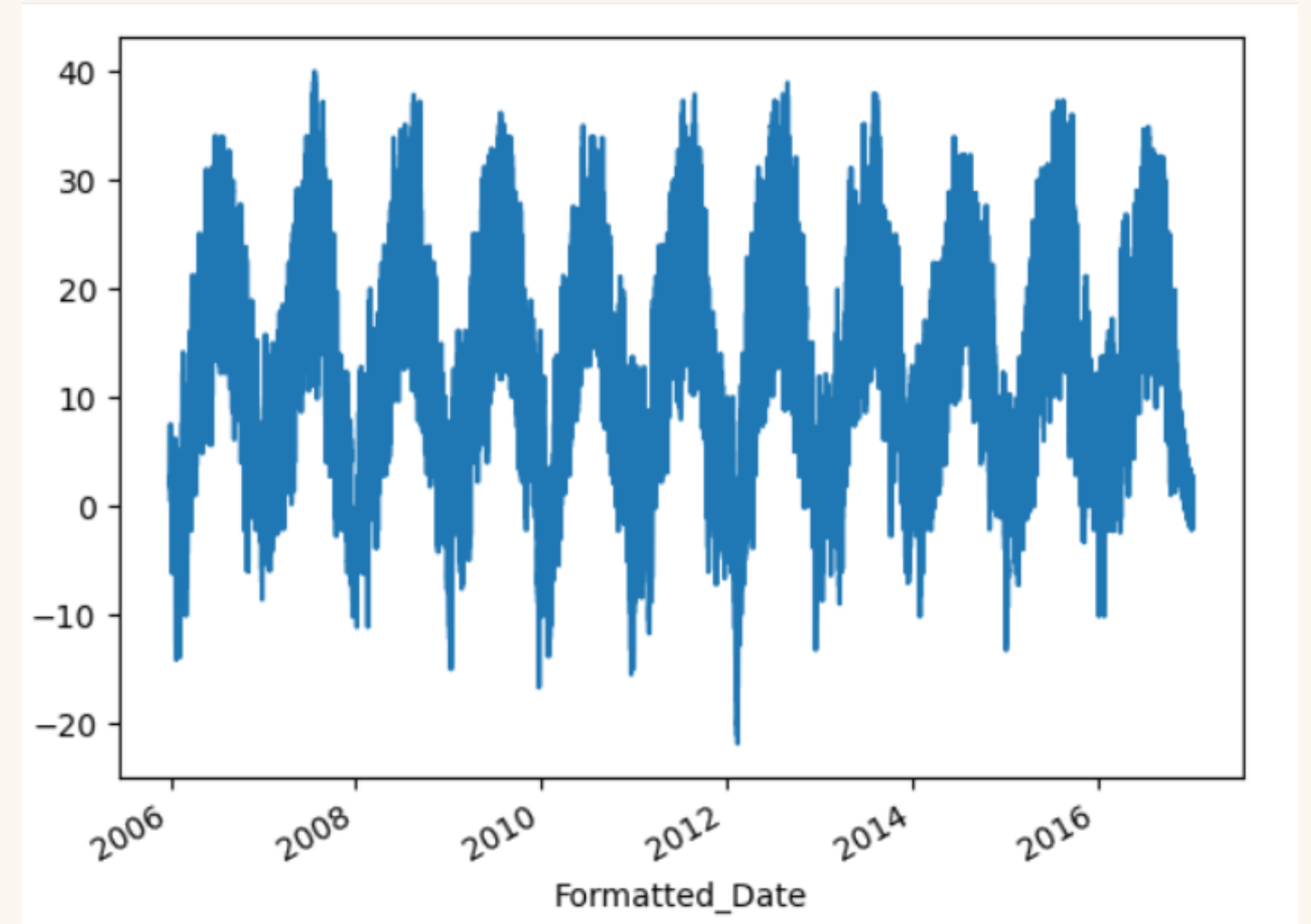
- Numerical weather prediction (NWP) is a process that utilizes mathematical models to anticipate the atmospheric conditions at a future time. These models rely on the laws of physics and chemistry that govern the atmosphere, and they are initialized using data from weather observations. NWP models are capable of generating forecasts for various weather elements like temperature, precipitation, wind, and cloud cover.
- Statistical forecasting methods make use of historical weather data to predict future weather conditions. These methods can produce forecasts for elements such as temperature, precipitation, and wind.



Results

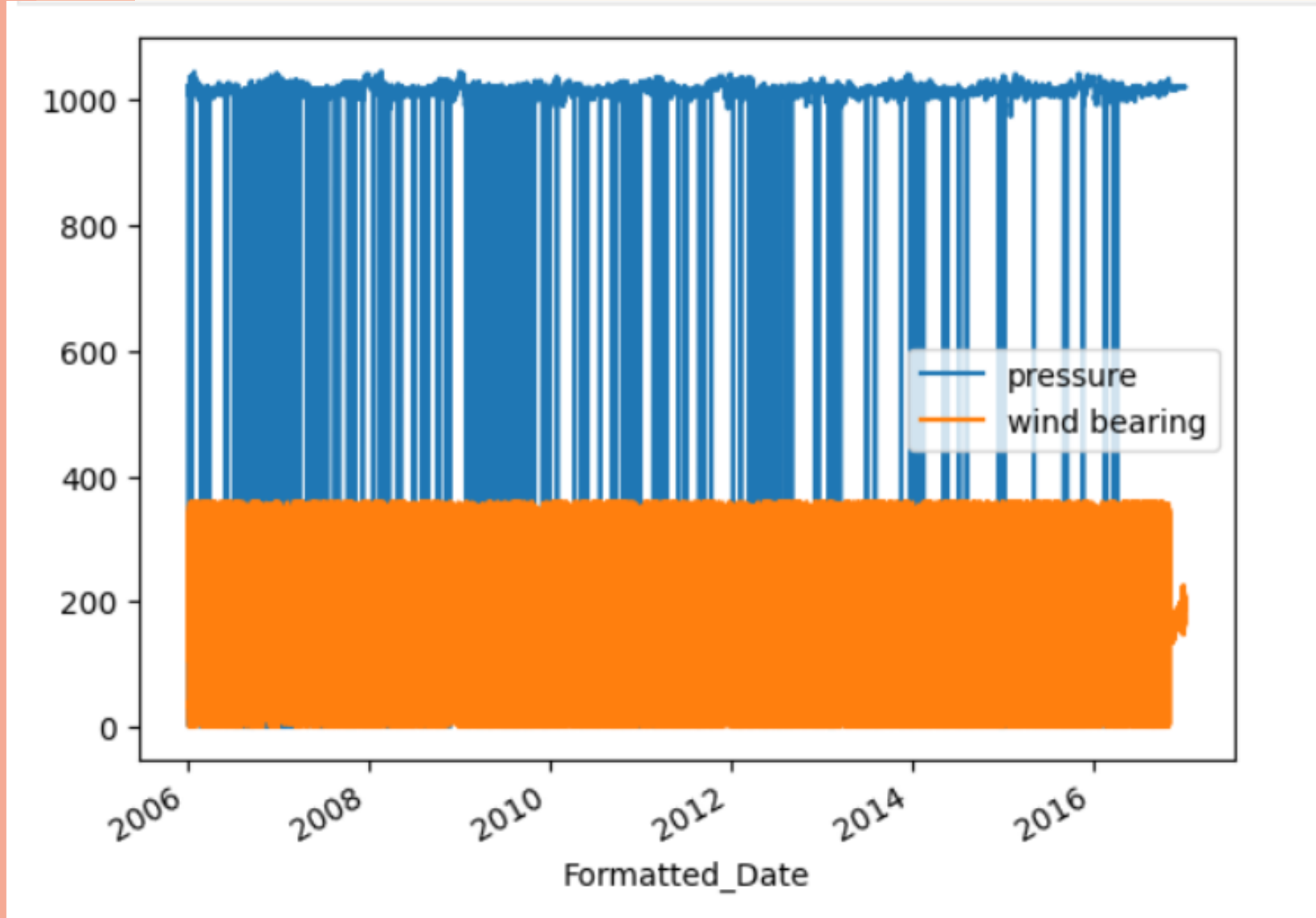


graph of weather for humidity and temperature

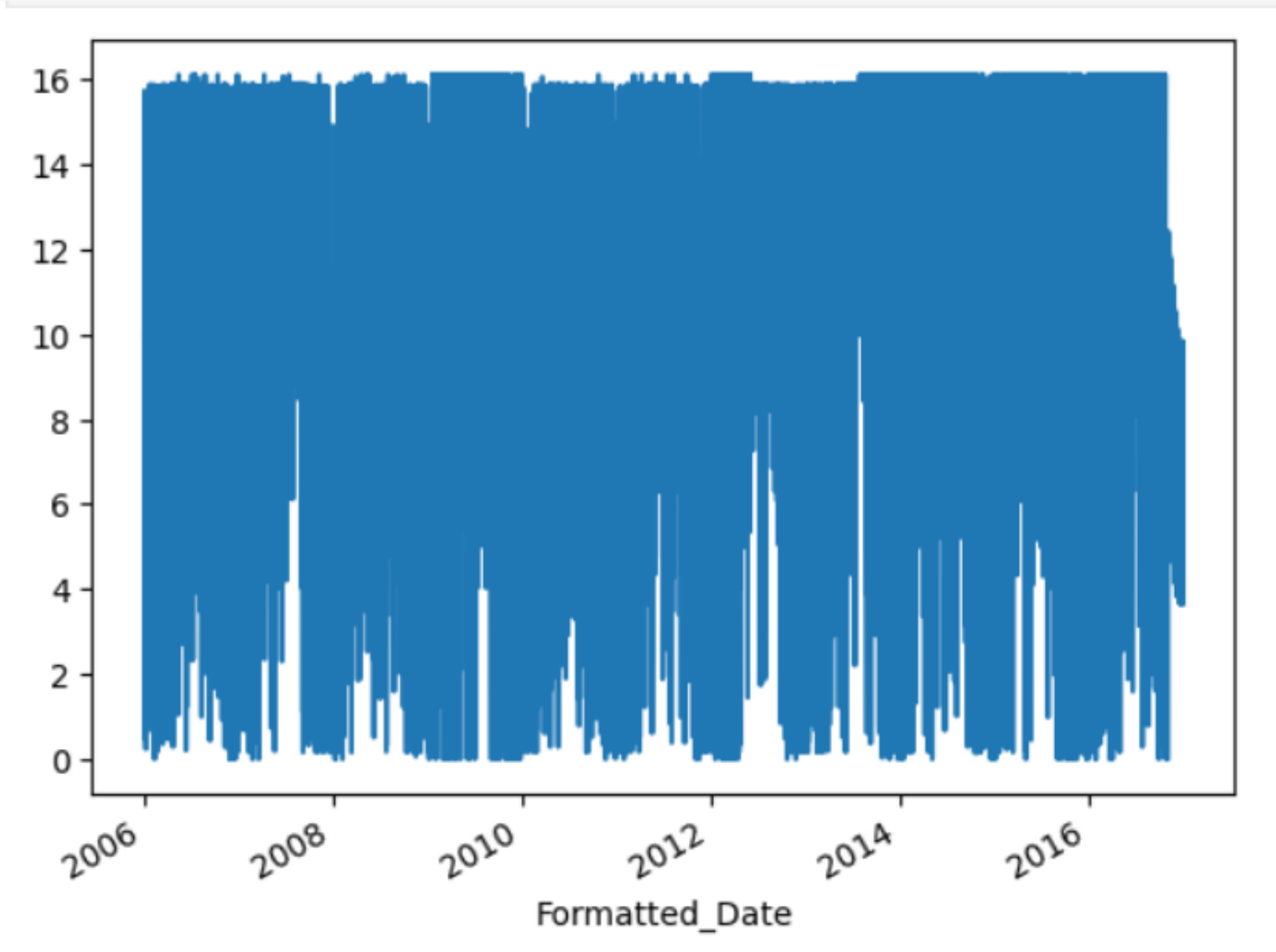


graph of temp(c)

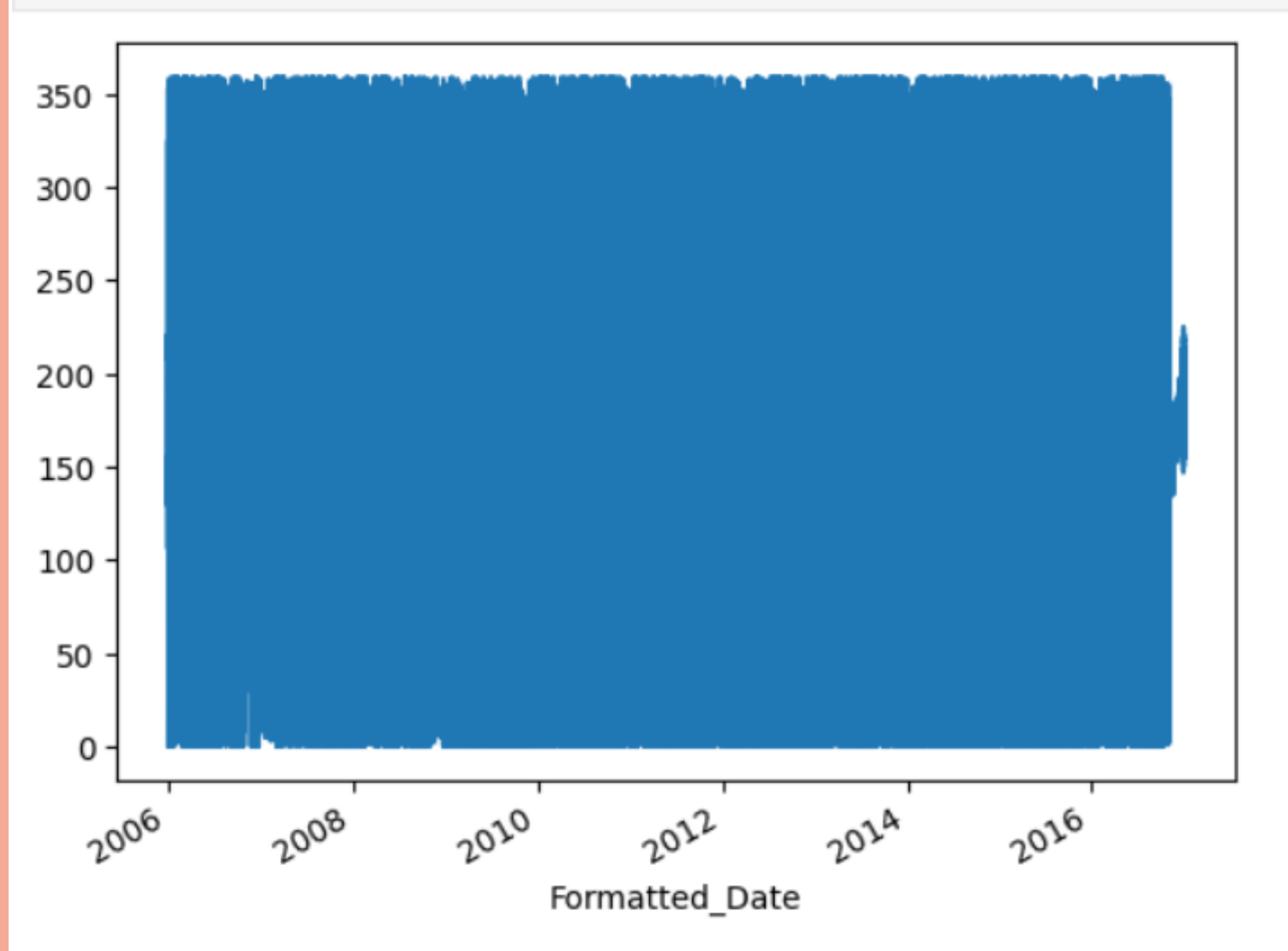
graph of weather for weather and pressure



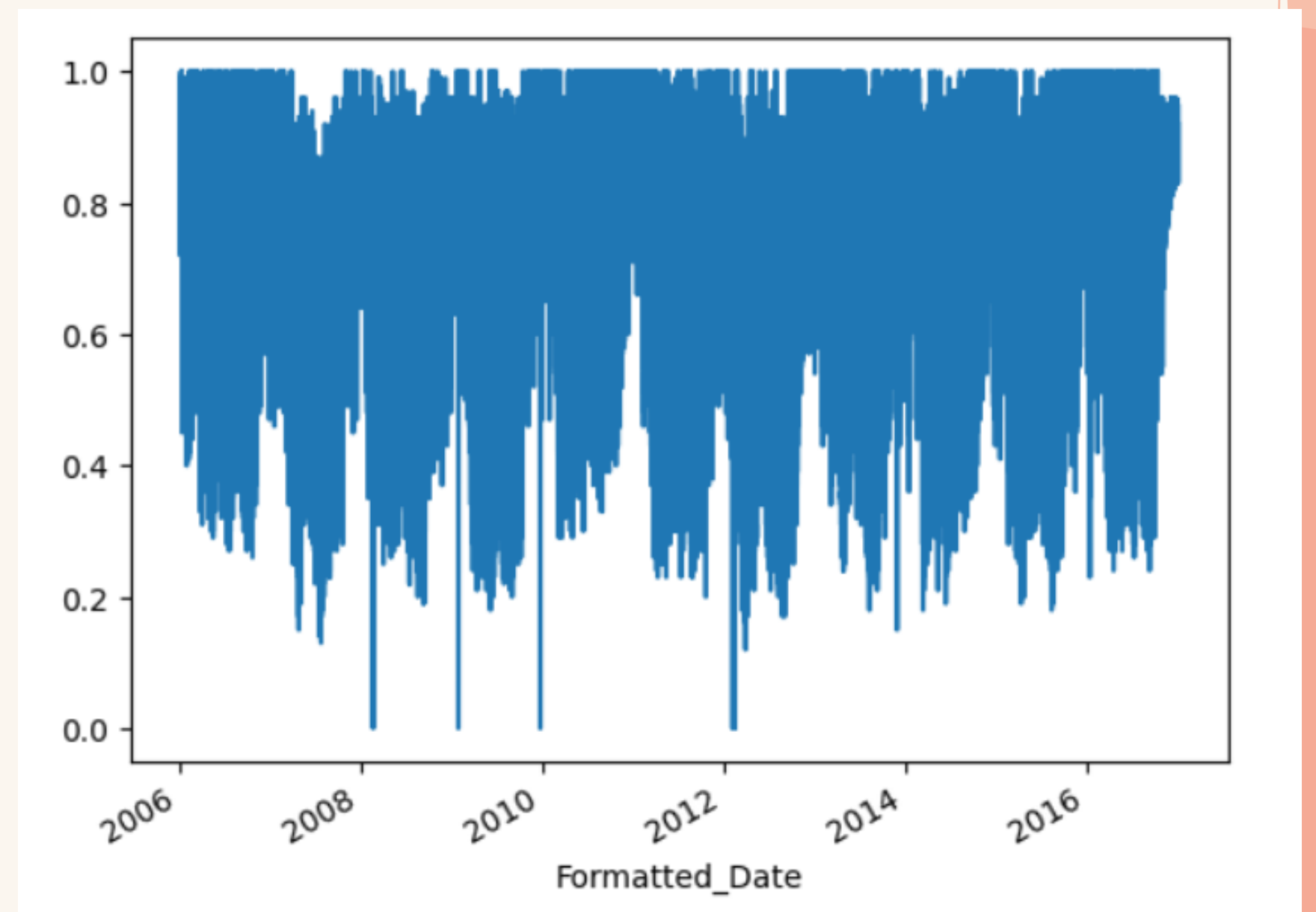
graph of visibility



graph of wind bearing



graph of humidity



CONCLUSION



This project has developed a novel technique for forecasting weather accurately. The novel approach utilizes a fusion of numerical weather prediction (NWP) and machine learning to anticipate local-scale precipitation. The efficacy of the innovative method was assessed using a historical dataset of precipitation observations, and it demonstrated superior accuracy compared to existing methods for both short-term and long-term forecasts.



THANK YOU!

