

Abstract

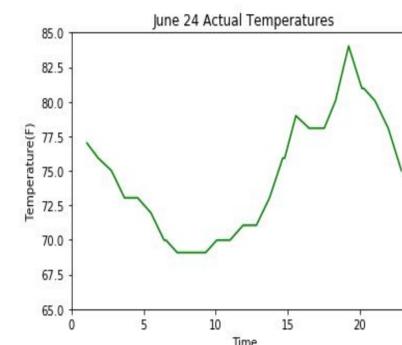
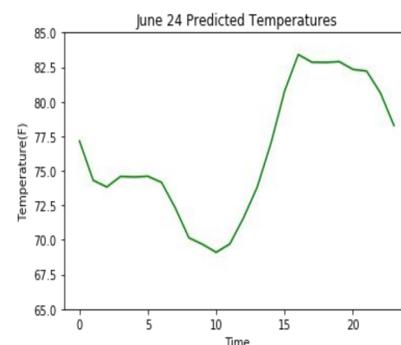
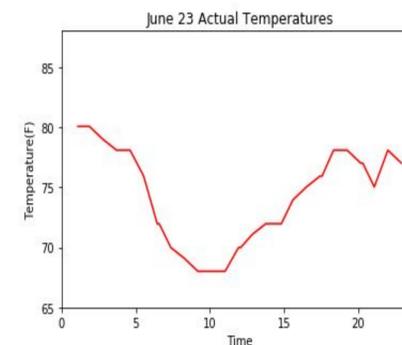
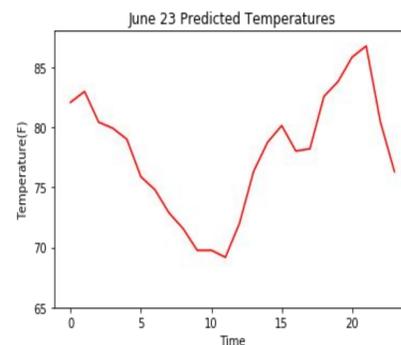
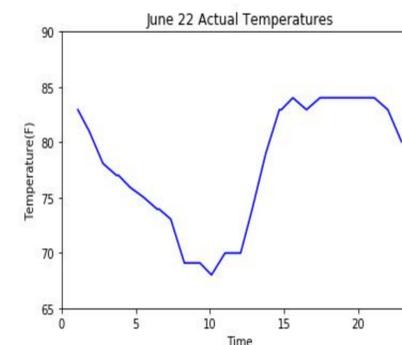
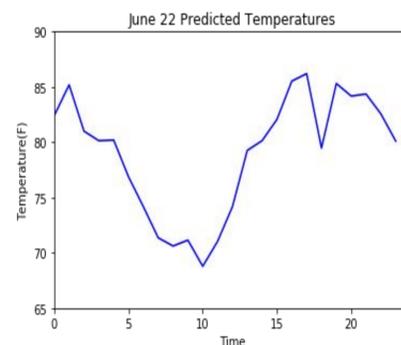
Weather predictions today are not completely accurate. This influenced us to present a research study to analyze the accuracy of urban weather station data compared to our forecast predictions. We were able to extract and examine weather data from the years 1900 to 2017 based on Central Park and Laguardia Airport stations. We pinpointed three dates in 2016 and used Python coding to find the mean average error. This means that our data was accurate since it was very similar to the real data. We researched and learned the importance of accurate weather forecasting.

Introduction

- Weather forecasting is the use of scientific technology to predict the atmospheric conditions in a certain area and time.
- Forecasts are made by collecting as much data of previous and current temperatures as well as humidities to guess how it will evolve in the future.
- We pinpointed three dates in 2016 and used Python coding to find the mean average error.
- This research is important because it tests the accuracy of weather forecasts and how we can make predictions more precise.

Methods

- We retrieved the data from the LaGuardia and Central Park weather stations for June 22, 23 and 24 of 2016 from Asos Weather Station Data.
- By using Python we created a code to compare the data, which was in two forms, netcdf and txt.
- By finding the mean average error of both data sets, we were able to see how accurate our data was compared to the weather station data.
- Using Python on Jupyter Notebook we created several plots in order to visually compare the accuracy of our forecast predictions.



Results

- Our results were fairly accurate compared to the weather station data.
- The mean for June 22nd 2016 for the real data was approximately 77 degrees Fahrenheit while the mean for June 22nd, 2016 for our predicted data was roughly 74. This means that there was only a 3 degree Fahrenheit difference.
- For max temperature, our max point was 2 degrees Fahrenheit higher than the max point for the real data on June 22nd, showing the similarity between our data and the real data.

Conclusion

Our predicted data are accurate since the absolute error, maximum value, and minimum value were all very similar to those of the real data. The largest difference in values between the datasets was only 3 degrees Fahrenheit in mean temperature for June 22nd, 2016.

Acknowledgement

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