Summary

In this assignment, I analyzed climate data provided by the National Centers for Environmental Information (NCEI) for the area near Ann Arbor, Michigan, covering the years 2005 to 2015.

Steps Taken:

Data Preparation:

I started by cleaning the data, removing leap day (February 29th) to ensure consistency across all years.

The data was processed to extract the year and the day of the year, which helped in analyzing temperature patterns.

Temperature Trends:

I created a line graph showing the record high and low temperatures for each day of the year from 2005 to 2014. The space between the high and low temperatures was shaded to highlight the range.

I also added the 2015 data to the graph to see if any 2015 temperatures broke previous records. These record-breaking points were marked separately.

Station Locations:

I mapped the weather stations near Ann Arbor, Michigan, to visualize where the temperature data came from.

2015 Temperature Summary:

Finally, I plotted a summary of the 2015 temperatures, showing the average daily highs and lows.

Tools Used:

Pandas: For data handling.

Matplotlib: For creating the graphs.

Folium: For mapping the station locations.

Conclusion:

This analysis helped in understanding historical temperature trends and identifying unusual temperature events in 2015. The visualizations clearly showed temperature changes over time and highlighted significant temperature records.