Using Python to access APIs and analyze the JSON data this project attempts to prove what we think is the answer to the question, “What is the weather like as we approach the equator?” It attempts to answer this general question in four specific ways. The four ways it looks at the weather variation with respect to the latitude are by temperature, humidity, cloudiness, and wind speed.

This analysis begins by selecting 500 unique cities chosen randomly by their latitude. It then uses a series of API calls to OpenWeatherMap to retrieve weather data for these cities. This data is then analyzed using Jupyter Notebook and plotted using Pandas and Matplotlib. The results of this process are the data used in a csv file and the four plots created from this data. These results are all available here.

This graph of temperature change with respect to latitude shows clearly what Minnesota snowbirds see anecdotally every winter. It is warmer closer to the equator.

This graph of humidity is a bit harder to see clear results, but there is indication that it is drier near -20 and + (20-40) latitude than it is nearer the equator. It would seem to indicate that it is also drier near the poles, but lack of data due to lack of cities near the poles can’t support this idea.

This graph of cloudiness with respect to latitude seems to spread the cloudiness rather evenly. There seem to be horizontal lines on the graph which would indicate the subjective nature of measuring the level of cloudiness, but with respect to latitude there is no indication from the data that there is a relationship.

This graph of wind speed with respect to latitude shows that it is more windy especially at +60 and -40 latitude and moving out toward the poles than it is at the equator.