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Python API Data Trends

NOTE: Due to dataset limitations, this analysis may be inaccurate due to small sample size.

1. For temperature, there is a slight positive relationship between high latitude and higher temperatures in the Northern Hemisphere. However, the significantly positive relationship between higher temperatures in the Southern Hemisphere and latitudes closer to zero lead me to believe that is simply due to a sampling error, as it makes far more sense for temperatures to increase as the distance from the equator decreases.

2. Looking at the relationship between humidity and latitude for the northern hemisphere leads me to initially believe that a higher distance from the equator will decrease the humidity, as there is a sharp slope downwards in the Northern Hemisphere - Humidity (%) vs. Latitude Linear Regression graph. But the Southern Hemisphere - Humidity (%) vs. Latitude Linear Regression graph makes me reconsider, as it does not show a strong relationship between humidity and latitude in either direction. With such inconclusive data, I can only conclude that there is either no relationship or simply not a strong relationship between humidity and latitude.

3. Judging by the two cloudiness graphs, there does not appear to be a clear relationship between cloudiness and latitude. Both have similar sizes in their slopes, but lead to opposite conclusions as the northern graph suggests that higher distance from the equator will decrease cloudiness, while the southern graph suggests that cloudiness will actually decrease as latitude increases and thus becomes closer to the equator. Therefore, the result for the cloudiness and latitude test is that there is no clearly defined relationship between the two.

4. Lastly, the graphs showing latitude and wind speed display a clearly defined relationship. Wind speed is shown to consistently increase as distance from the equator increases, as the cities with latitude numbers closer to the equator are shown to have lower wind speeds compared to cities that are further away from the equator. As the regressions are shown to mirror a pattern in both graphs for this set rather than contradict each other, this is the analysis that I am most confident in.