1. The cities are disproportionately distributed.

The northern hemisphere (335) contains approximately 70% of the cities in the dataset, with the remaining 145 cities, 30%, located in the southern hemisphere. The size of the sample/population is probably why there is a difference in temperature and humidity items against the latitude between the northern and southern hemispheres.

2. There is a relationship between latitude and temperature.

There is a strong negative relationship in the northern hemisphere and a strong positive one in the southern hemisphere.

The regression line indicates that the correlation between the Northern Hemisphere temperature and the latitude is strongly negative at -0.88 (i.e., at higher latitudes, you will find lower temperatures). As the latitude increases, the distance from the equator increases, so the temperature decreases, moving away from the equator. The correlation between the Southern Hemisphere temperature and the latitude is a strong positive correlation (higher the latitude, higher the temperature) at 0.69. Because the r-squared value is closer to 1 than 0, the model better predicts that temperature and latitude in the southern hemisphere change together in the same direction. As the latitude increases, the distance from the equator decreases, so we move closer to the equator, where the temperature increases.

3. There is a relationship between latitude and humidity.

The measure of humidity changes is based on the temperature resulting in a moderate positive (0.23, higher latitudes, higher humidity) relationship between latitude and humidity in the northern hemisphere, where higher latitudes result in lower temperatures opposite to the southern hemisphere, where higher latitudes drive higher temperatures.

4. Further notes are within the notebook. My code and discussion are a product of my request for assistance from the instructor and TA’s during office hours, tutor sessions, and Stack Overflow suggestions.