API Homework: Written Analysis

1. When examining max temperature of the 533 cities that were randomly selected, there appears to be a correlation between temperature and latitude. The cities that have a latitude closer to zero tend to have a higher max temperature than cities that have a latitude farther away from zero. This could be due to the fact that these cities are closer to the equator. Since our planet is a sphere, the equator marks the latitude that is closest to the sun. Because of this, it is no surprise that the cities that lie close to the equator experience higher max temperatures.
2. It is important to note that the correlation between latitude and max temperature when comparing cities that are above and below zero latitude is not equal. For example, cities around 40 degrees latitude tend to have a max temperature around 40 degrees Fahrenheit. Cities at a latitude of -40 degrees have a temperature of around 60 degrees Fahrenheit. This observation is most likely caused by the earth’s tilted axis which, depending on the time of the year will cause the southern or northern hemisphere to be closer to the sun. Since the cities with negative latitudes have a higher temperature, these cities during this date are generally closer to the sun than cities with a positive latitude.
3. It appears that latitude and humidity and that latitude and cloudiness have no relationship. This observation could be made when examining the latitude vs. humidity plot and the latitude vs. cloudiness plot. It is possible that humidity and cloudiness are caused by other factors, rather than latitude, such as elevation. Since latitude and max temperature are arguably related, it is possible that max temperature of a city has little to no correlation with its humidity and cloudiness on a daily basis.