Weather and Vacation Data Collection and Analysis
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Part 1 Observable Trends

- I was able to observe that there is a relationship between latitude and temperature. By grouping the data by northern and southern hemispheres I was able to view that there is a strong correlation between temperature and latitude specifically in the southern hemisphere.
- I also was able to observe that despite what we may think there is not a strong relationship between humidity and latitude. I know that many people think that it is more humid closer to the equator but based on this data analysis no relationship was found.
- I also found it very interesting that neither windspeed nor cloudiness was impacted by latitude. It seems that wind and cloudiness can occur anywhere, and it does not depend on latitude.
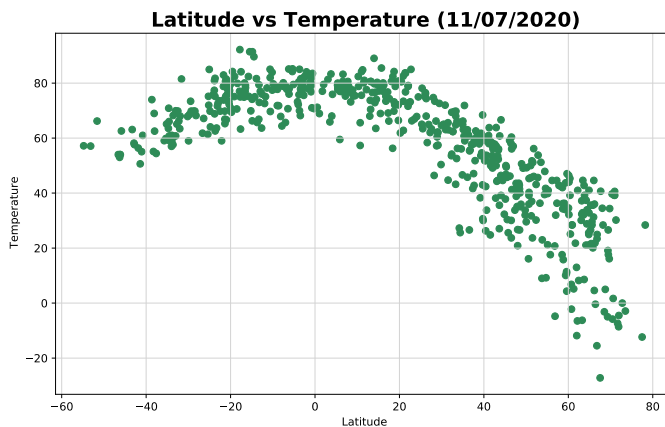

1.
  a. This scatter plot is showing that as the latitude approaches the equator the temperatures increase. Thus meaning that it is warmer in the area closes to a latitude of 0.
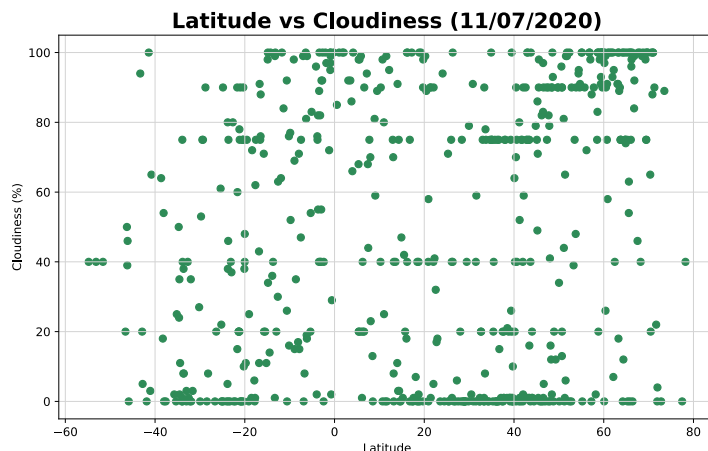

2.

a. This scatter plot represents that there is not a true relationship between latitude and cloudiness. It shows that there can be 100% cloud coverage or 0% cloud coverage regardless of the latitude.

Latitude vs Wind Speed (11/07/2020)
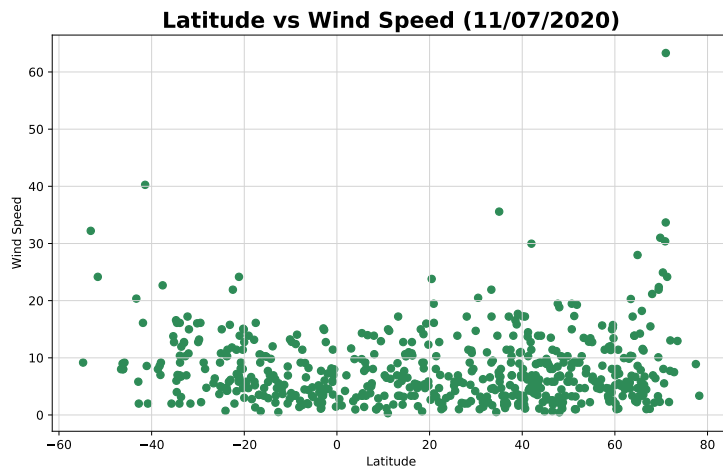
3.

a. This scatter plot shows that windspeed is most commonly less than 20 mph, but there are several outliers that are represented on the graph. No true relationship is shown within the scatter plot, it would be interesting to drop the outliers and to look deeper into the data.
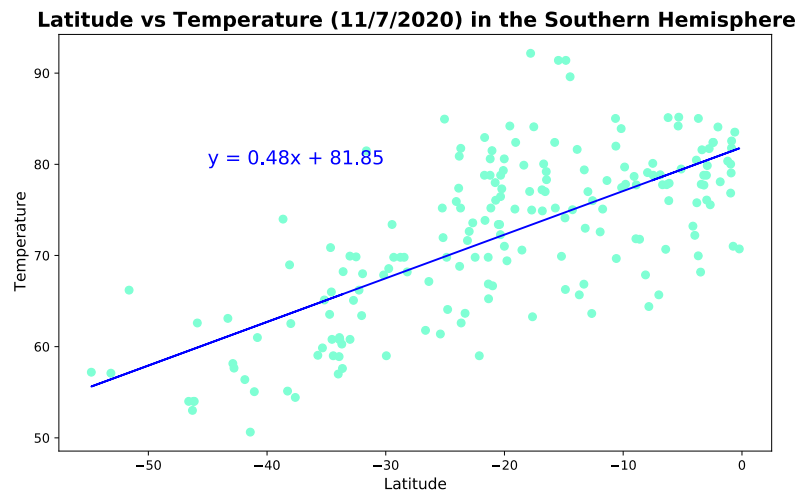

Latitude vs Humidity (11/07/2020)
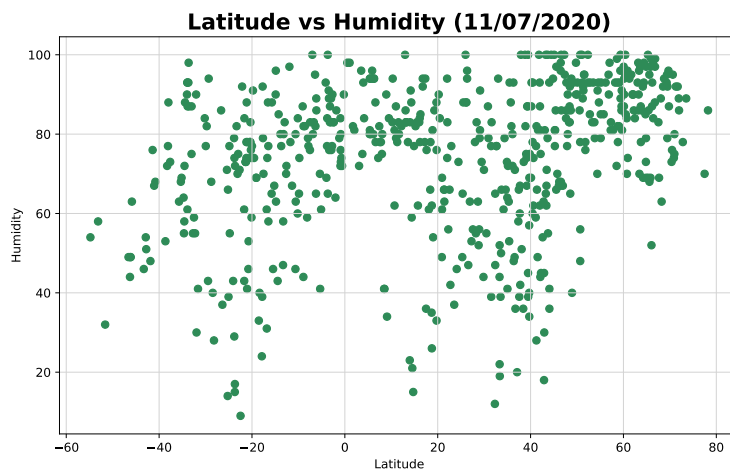
4.

a. Lastly, the relationship between latitude and humidity surprised me. I was expecting that closer to the equator there would be an increase in humidity. This graph certainly would be more interesting when the data is split based on north and south hemispheres.
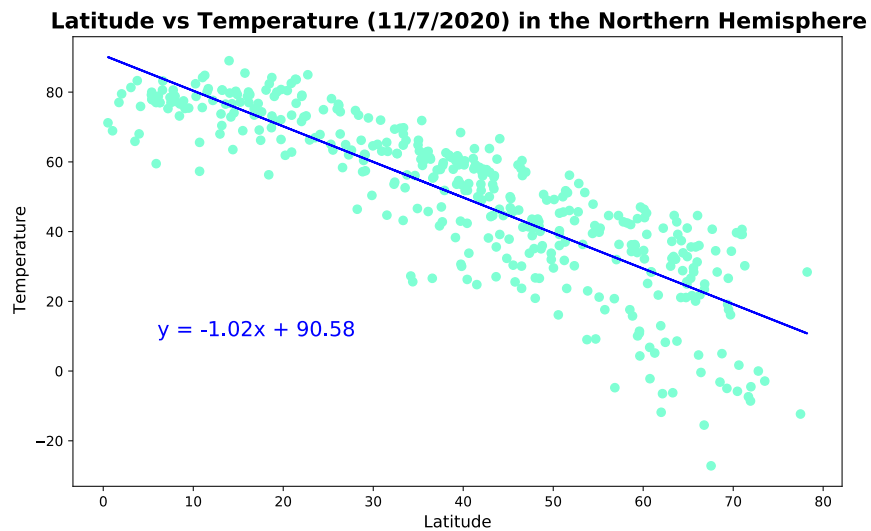
Southern Hemisphere vs Northern Hemisphere Regressions
1. Temperature

Latitude vs Temperature (11/7/2020) in the Southern Hemisphere

$y = 0.48x + 81.85$

a.
    i. R squared = 0.4914

Latitude vs Temperature (11/7/2020) in the Northern Hemisphere
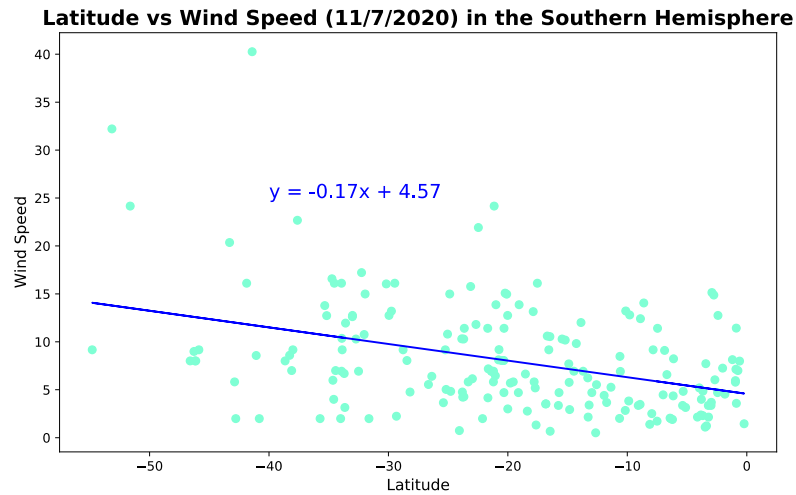

$y = -1.02x + 90.58$

b.
    i. R squared = 0.72339
c. The linear regressions scatter plots between temperature and latitude based on hemisphere show that there is a positive correlation between temperature and latitude within the southern hemisphere and a negative correlation between temperature and latitude in the northern hemisphere. The r squared values represent how strong the correlation values is, we are able to determine that there is a stronger correlation between temperature and latitude in the
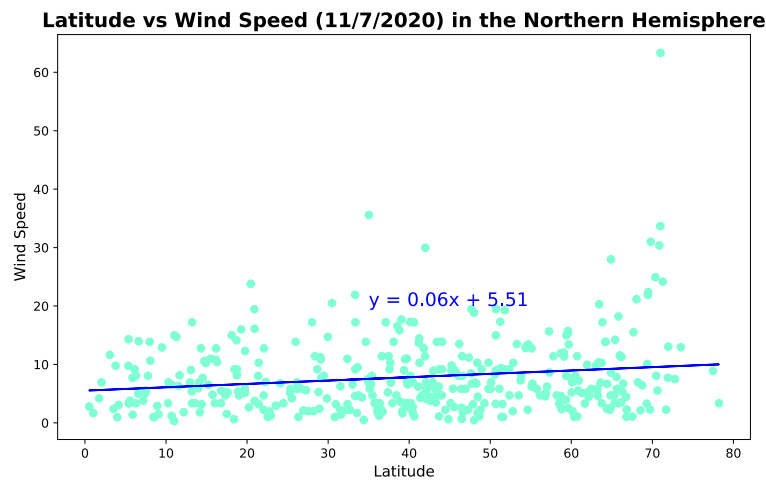
Northern hemisphere with an r squared value of 0.72 than in the southern hemisphere with a value of 0.49.

2. Wind Speed

Latitude vs Wind Speed (11/7/2020) in the Southern Hemisphere

$y = -0.17x + 4.57$

Wind Speed

Latitude

a.

    i. R squared = 0.1567

Latitude vs Wind Speed (11/7/2020) in the Northern Hemisphere
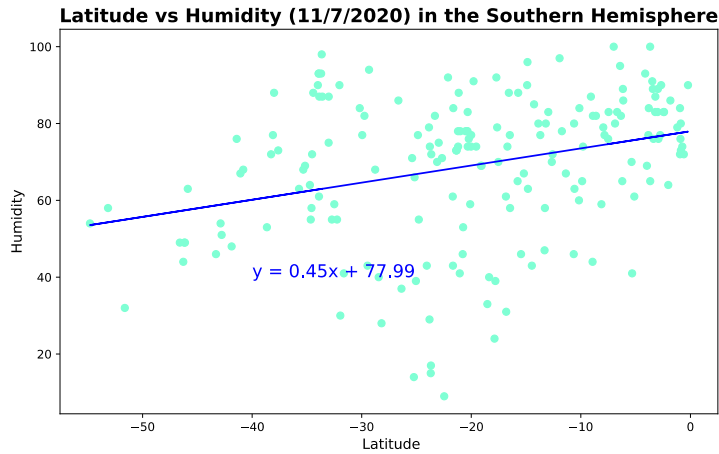
$y = 0.06x + 5.51$

Wind Speed

Latitude

b.

    i. R squared = 0.029890224013068217

c. The linear regressions plots displayed approve confirm that there is not a strong relationship between wind speed and latitude in either the northern or southern hemisphere.
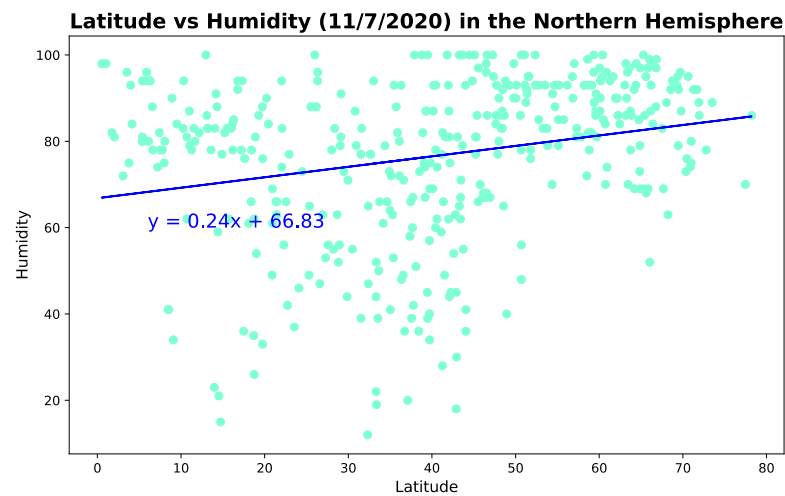
3. Humidity

Latitude vs Humidity (11/7/2020) in the Southern Hemisphere

y = 0.45x + 77.99

a.
    i. R squared = 0.09466151828654232
b.

Latitude vs Humidity (11/7/2020) in the Northern Hemisphere

y = 0.24x + 66.83

c.
    i. R squared = 0.06124577182066753
d. The linear regressions plots displayed approve confirm that there is not a strong relationship between humidity and latitude in either the northern or southern hemisphere.
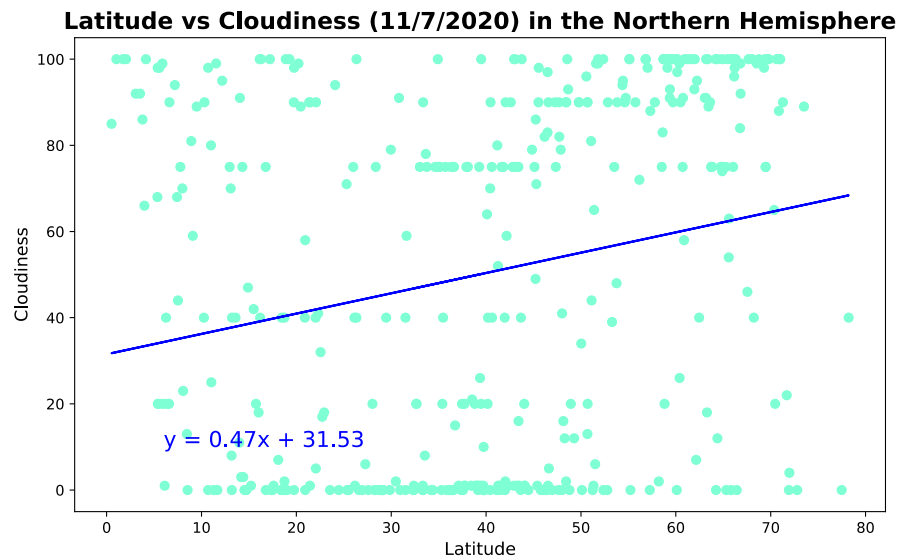e.

4. Cloudiness

Latitude vs Cloudiness (11/7/2020) in the Southern Hemisphere

$y = 1.03x + 64.13$
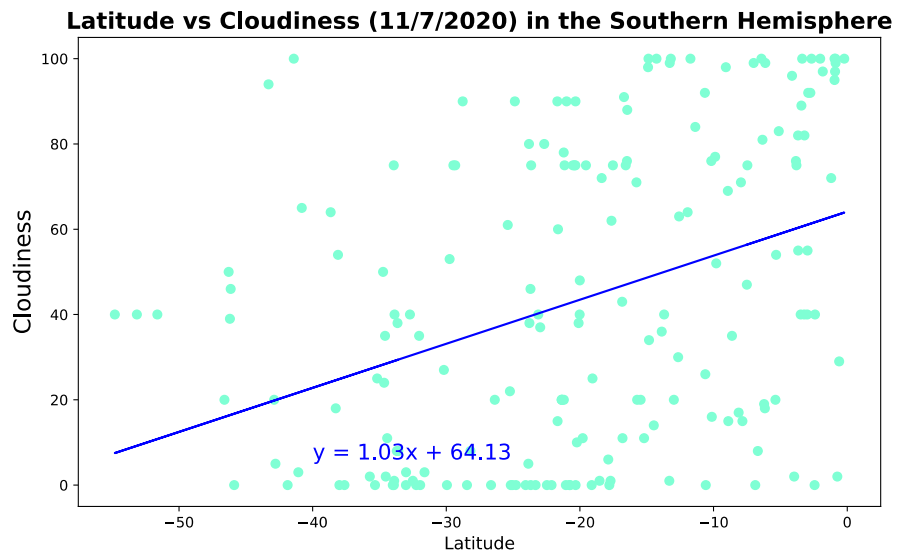
a.

    i.   R squared = 0.1403516720691378

Latitude vs Cloudiness (11/7/2020) in the Northern Hemisphere
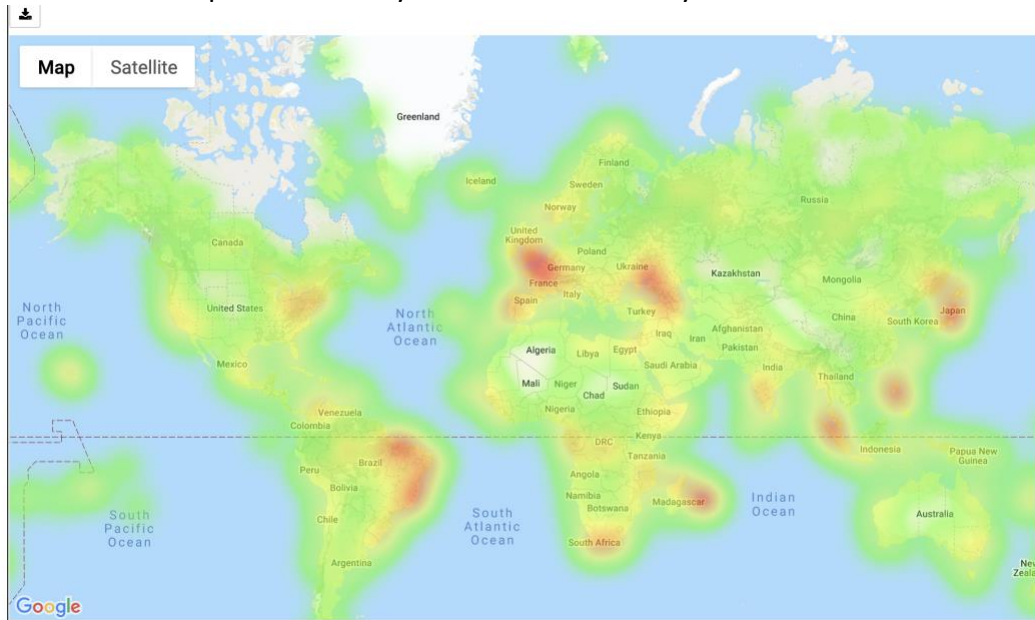
$y = 0.47x + 31.53$

b.

    i.   R squared = 0.050533

c. The linear regressions plots displayed above confirm that there is not a strong relationship between cloudiness and latitude in either the northern or southern hemisphere.

Map Images

1. Heat map with intensity based off of humidity

2. Idea weather map with hotels in each location