6.4.5 Find the Correlation Between Latitude and Wind Speed

One more linear regression line and plot and you'll be done! This time you need to create the linear equation plot on the latitude and wind speed for the Northern and Southern Hemispheres. Remember to stay focused so you don't make any mistakes when you refactor the code.

By now you're considering how to automate this process. You could write an algorithm to execute the scripts to generate the x- and y-values from the Northern and Southern Hemispheres DataFrames and call the `plot_linear_regression` function. Your manager and CEO would be impressed!

Seeing that we're nearly finished, let's stay focused and knock out the last regression lines and equations for the wind speed for the Northern and Southern Hemispheres.

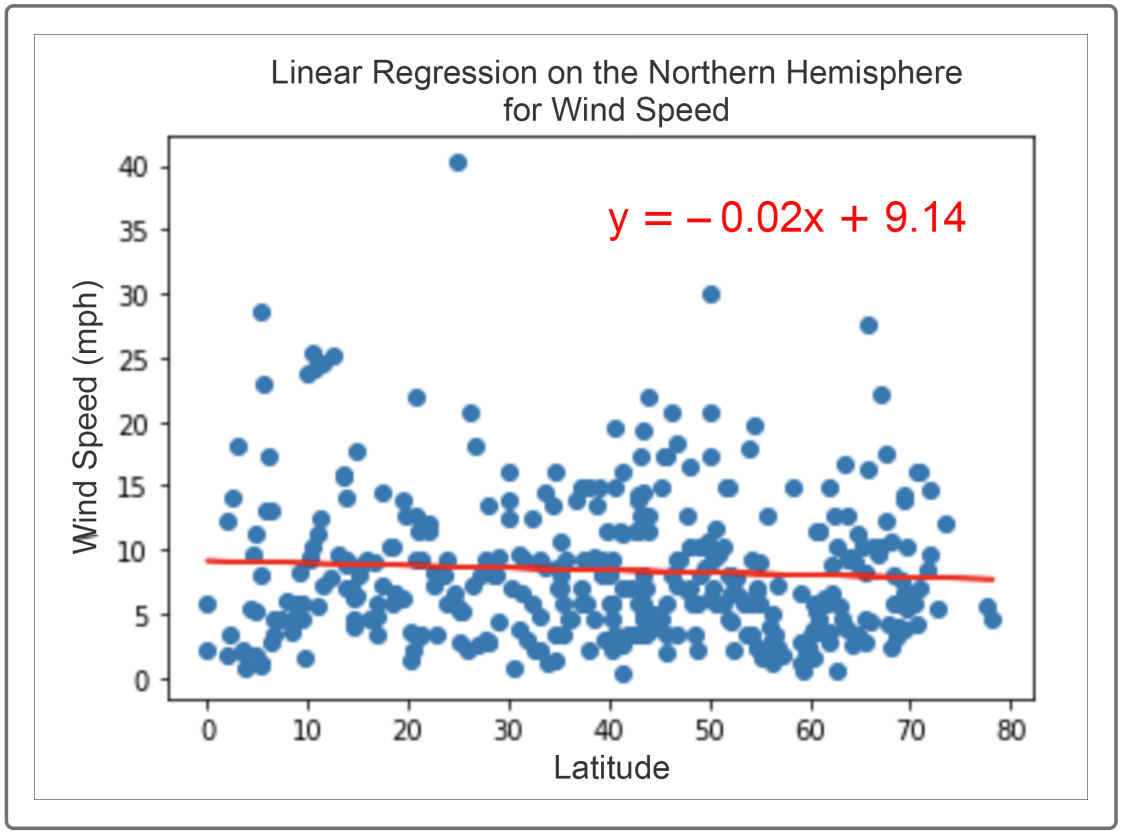
Perform Linear Regression on the Wind Speed for the Northern Hemisphere

Call the `plot_linear_regression` function, with the x-value equal to the Latitude column and the y-value equal to the Wind Speed column from the `northern_hemi_df` DataFrame. Edit the `title`, `y_label`, and `text_coordinates` for the wind speed scatter plot.

Add the code to a new cell and run it to generate the linear regression and plot the data.

```
# Linear regression on the Northern Hemisphere
x_values = northern_hemi_df["Lat"]
y_values = northern_hemi_df["Wind Speed"]
# Call the function.
plot_linear_regression(x_values, y_values,
                       'Linear Regression on the Northern Hemisphere \n
                        for Wind Speed', 'Wind Speed',(40,35))
```

The scatter plot with the regression line and equation should look like the following.



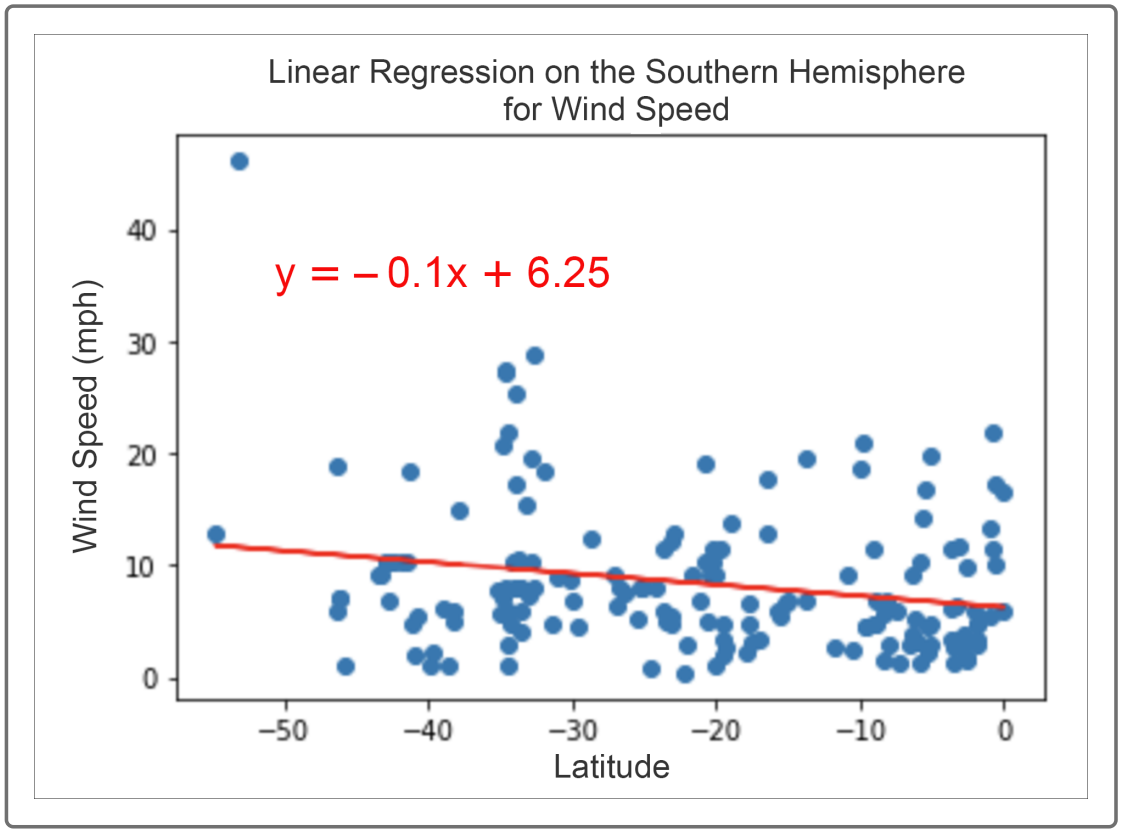
Perform Linear Regression on the Wind Speed for the Southern Hemisphere

Finally, let's call the `plot_linear_regression` function, with the x-value equal to the latitude column and the y-value equal to wind speed column from the `southern_hemi_df` DataFrame. Edit the `title`, `y_label`, and `text_coordinates` for the wind speed scatter plot.

Add the code to a new cell and run it to generate the linear regression and plot the data.

```
# Linear regression on the Southern Hemisphere
x_values = southern_hemi_df["Lat"]
y_values = southern_hemi_df["Wind Speed"]
# Call the function.
plot_linear_regression(x_values, y_values,
                       'Linear Regression on the Southern Hemisphere \n
                        for Wind Speed', 'Wind Speed',(-50,35))
```

The scatter plot with the regression line and equation should look like the following.



FINDING

The correlation between the latitude and wind speed is very low because the r-value is less than −0.07 for the Northern Hemisphere and less than −0.3 for the Southern Hemisphere for the plots shown here. This means that wind speed is unpredictable due to changing weather patterns that can increase or decrease wind speed. Check the r-values for your plots.

ADD/COMMIT/PUSH

Add your `WeatherPy.ipynb` file to your World_Weather_Analysis GitHub repository.