Dear ATOC REU Student,

Welcome to the final **Python Bootcamp Review Challenge**! Your hard work and dedication have brought you far and it's worth taking a moment to pat yourself on the back! Go on, we'll wait… ☺

This challenge includes a comprehensive review of many core concepts covered over the last two weeks. Because the exercise covers so much content, take your time with it. Instead of rushing through to the end, consider this exercise a resource to come back to throughout the program.

Good luck and have fun!

"There will always be rocks in the road ahead of us. They will be stumbling blocks or stepping stones; it all depends on how you use them." – Friedrich Nietzsche

Task Description:

You are evaluating a potential new site for a wind turbine. The site developer has sent you both a data file called Dec2018Components2.csv and a code sample called Day_9_challenge.ipynb. Your task is to fix all the code bugs and, in the process, create the following plots:

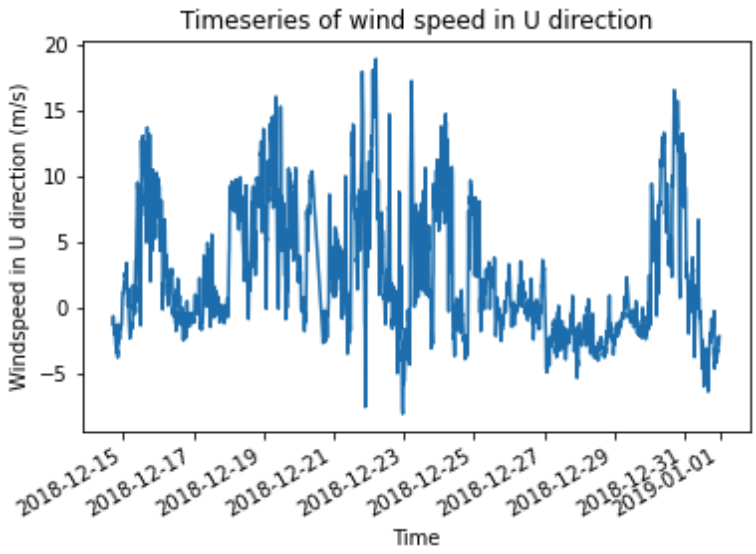

Figure 1: Timeseries of the U-direction wind speed

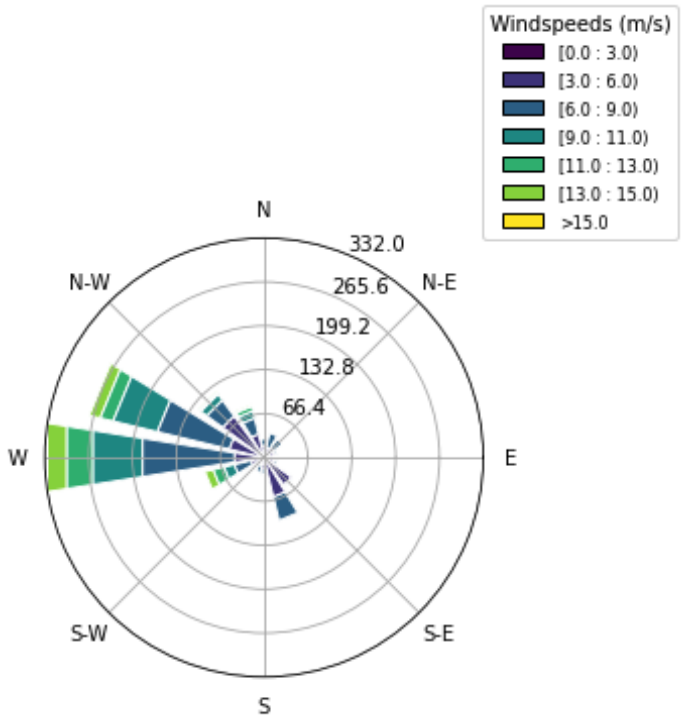

Figure 2: Wind rose for wind-turbine-friendly winds

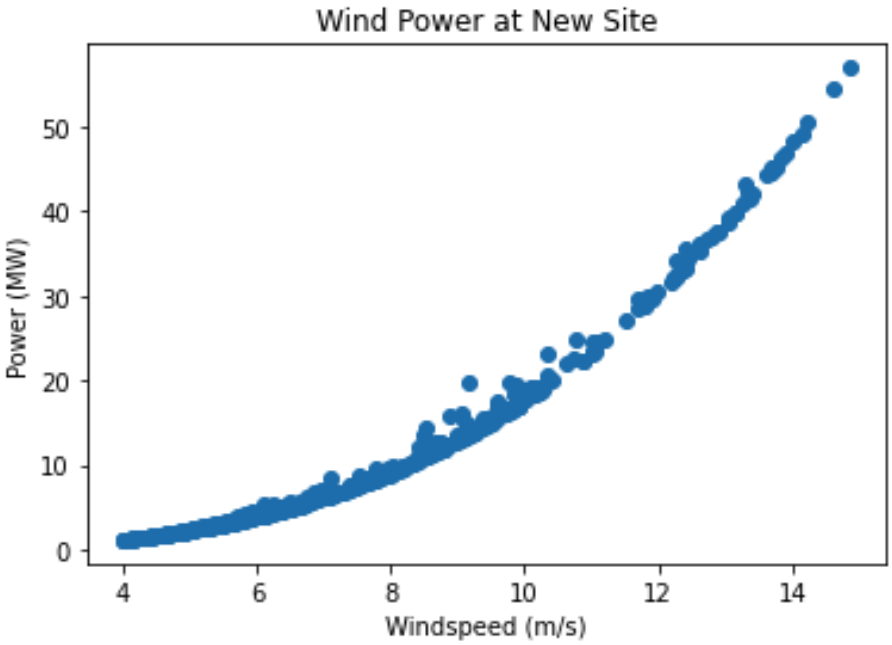

Figure 3: Expected generated wind power for different wind speeds

<u>Helpful tips:</u>

Tip 1: Assume there are no bugs in any written instructions. Reading the documentation, comments, and markdown closely may actually offer clues on where the bugs are.

Tip 2: Remember that the focus of this exercise is on programming skills and assumes no background knowledge in wind energy meteorology.

Tip 3: You may wish to do your work in a Day_9_challenge_YOURLASTNAME notebook to reference the original challenge more easily.

Tip 4: You may wish to fill out the DebuggingAidStudent document to record the bugs that you find. This will make it easier for you and your instructors to keep track of code changes. The answer key includes 10 separate bugs.