Rubric - The Climate Scientist Who Will Change the World

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Submission format: Upload link to GitHub repository on UVA canvas

Individual Assignment

Why am I doing this?: The goal of this project is to further expand your time-series analysis skills and practice forecasting using the method(s) of your choice. By the end of the project, you should have a better sense of how time-series analysis as a whole works. Also, this project will help you better understand the pressing issue of climate change and what factors contribute the most to it.

What am I going to do?: Everything you need, including the data, code, and articles, are in this GitHub repository: https://github.com/keivonc/CaseStudy/tree/main. You are going to either modify or extend the existing Python code (in the Jupyter Notebook) to forecast and make predictions of future climate trends, such as average temperature, minimum temperature, maximum temperature, precipitation, and Palmer Drought Severity Index (PDSI). After you are satisfied with your predictions, you will create a **NEW** GitHub repository as outlined below and upload your code, along with any output/images/graphs it produced.

Tips for success:
- Don't be afraid to try unfamiliar techniques. You may not have experience with time-series forecasting, which is okay, so this is your opportunity to try something new.
- Read through the Jupyter notebook to make sure you understand the structure of the data and the previous code. This will help you decide what direction you want to move in.
- Have fun! This should be a cool project at the end of the day, so don't let it stress you out and try to learn from your mistakes.

How will I know I have succeeded?: You will meet expectations on this assignment when you have followed the criteria in the rubric below.

Spec Category	Spec Details

Formatting	● One Github Repository (submitted via link on Canvas)
	● To ensure **reproducibility**, the repository will adapt parts of the TIER Protocol 4.0. In a nutshell, the top level page of the repository should contain:
	    o A README.md file (which auto displays)
	    o A LICENSE.md file (use MIT as default)
	    o A CODE folder

	○ AN OUTPUT folder

README.md	● <u>Goal</u>: This file is a guide for anyone who comes to your repository
	● Use markdown headers to divide content.
	● Make an H2 (##) section explaining the contents of the repository
	
	● Section 1: Title and description
	  ○ Here, just come up with a creative title as the header name and briefly describe what you did right underneath.
	
	● Section 2: A Map of your documentation.
	  ○ In this section, you should provide an outline or tree illustrating the hierarchy of folders and subfolders contained in your Project Folder, and listing the files stored in each folder or subfolder.

LICENSE.md	● <u>Goal</u>: This file explains to a visitor the terms under which they may use and cite your repository. ● Select an appropriate license from the GitHub options list on repository creation. ● Usually, the MIT license is appropriate.
CODE folder	● <u>Goal</u>: This folder contains your Jupyter notebook and any other source code. ● Make sure to write descriptive comments for the significant sections of your code. ● Keep code clean and well-organized so others (and yourself) can easily read and understand your code.
OUTPUT folder	● <u>Goal</u>: This folder contains all of the output generated by your project, e.g. figures, tables, etc. ● Any tables and/or figures produced by your code should be included. ● Use descriptive names for your files.