Temperature/Crime Case Study Rubric

DS 4002 – Mina Tunley
Due date varies

Submission format:

- **Upload link to GitHub repo to Canvas**

Individual Assignment

Why am I doing this? This case study allows you to practice data science and statistical analysis skills to evaluate a potential problem here in Charlottesville. As you work, you'll utilize data processing, synthesis, and analysis steps to reach your own conclusion.

What am I going to do? The GitHub repository for this assignment can be found at https://github.com/mina-ty/DS4002-CaseStudy. You will work through the steps found in the Python notebook to process historic temperature and crime data in Charlottesville, Virginia. Using the Pearson Correlation Coefficient, you will draw a conclusion about whether temperature in Charlottesville appears to have a significant impact on the rate of crime. Supplementary materials to support your understanding of the data and the tasks can be found in the repository. In order to make a conclusion, you will complete the outlined code in the Python notebook within the repository. Your final deliverable will include:

- Completed Python notebook with well-commented code
- A markdown file outlining the results from your code

This will be submitted electronically via a link to your GitHub repository including these documents and the rest of the material provided to you.

How will I know I have Succeeded? You will meet expectations on CS3 Create Case Study when you follow the criteria in the rubric below.

Spec Category	Spec Details

Formatting	• Submit a link to your GitHub repository forked from the link provided above. The submitted repository should have all the original files, with only the following files being edited (both found in the SCRIPTS folder):
	  ○ correlation.ipynb
	  ○ results.md

Source code file (correlation.ipynb)	● Complete the code blocks in this Python notebook based on the instructions provided in the file. Your completed code should output: ○ 2 preliminary plots ○ Pearson correlation between overall temperature and crime ○ Pearson correlation between temperature and specific types of crime ● Ensure that your code would be understandable to someone looking at the file for the first time. Use meaningful variable names, comment your thought process, etc.
Results (results.md)	● Detail your preliminary results based on the output of your source code. This file should include: ○ A brief explanation of how to interpret Pearson correlation (source 3 in the supplementary materials will be helpful to support your background knowledge) ○ Numeric outputs from your source code ○ Your own explanation of what the numeric data means and potential reasons behind those results (again, supplementary materials will be helpful to draw conclusions)