CS3 Rubric – Case Study Results Reproduction

DS 4002 – Instructor: Loreto Alonzi
Due: TBD
Individual Assignment
General Description:
Submit a one-to-two page PDF report to Canvas. This report is based on your work analyzing the Elon Musk event file created by a group from a prior DS 4002 semester. Since the final assignment in this course requires you to independently produce a similar case study, this exercise is meant to help you understand the workflow and prepare for creating your own.
Preparatory Assignments: None

Why am I doing this?

Reproducing another analyst's workflow is a core skill in data science. This case study gives you experience executing a full forecasting pipeline, exploring how real-world events may relate to stock movement, and practicing time-series modeling techniques. As you work through the materials, you will strengthen your skills in EDA, ARIMA forecasting, reproducibility, and interpreting the influence of public events.

Course Learning Objective: Reproduce results based on documented steps.
Course Learning Objective: Practice research integrity: transparency and replicability.

What am I going to do?

You will follow the instructions in the GitHub repository to replicate the analysis performed on Tesla stock prices and the Elon Musk event timeline. If you encounter challenges or discrepancies, you will document them. Finally, you will provide feedback about the clarity, documentation, and reproducibility of the project.

It is acceptable if you cannot reproduce everything perfectly, what matters is that you identify the obstacles and explain them clearly.

Tips for success:

- Follow the documented workflow carefully
- Take notes on any issues encountered
- Offer constructive, thoughtful feedback
- Do not worry if results differ, document why

How will I know I've succeeded?
You have succeeded when you complete all required sections, your scripts run cleanly from start to finish, your results match expected outputs, and you can explain whether public events appear to influence Tesla stock behavior.

Formatting	● 1-2 pages ● PDF ● Order o Title o Name, Course, and Date o Project Overview (1 paragraph) o Reproduction Steps (1 paragraph) o Challenges (1 paragraph) o Feedback (1 paragraph)

Project Overview	● **Project to Analyze:** *Tesla Stock & Public Scrutiny*, provided via GitHub repository. ● **Goal:** Understand the purpose and context of the original project. ● In this section, you should: ○ Summarize the project's objective (forecasting Tesla stock and examining public events involving Elon Musk). ○ Describe the datasets used, including the Tesla stock price data and the Musk event timeline. ○ Identify key results or insights demonstrated in the original project (e.g., visual patterns, forecast outcomes, notable event-stock relationships).
Reproduction Steps	● **Goal:** Demonstrate the steps you took to replicate the workflow. ● In this section, you should outline: o How you ran ARIMA forecasting o How you generated and interpreted the event overlay plot o Whether outputs matched those shown in the original project o How you loaded and prepared the dataset o How you executed exploratory analysis ● This is a factual description of what you did, not an evaluation.
Challenges	● **Goal:** Document challenges encountered during reproduction. ● Examples include: o Missing or unclear instructions o Code that didn't run as written o Package or version mismatches o Discrepancies in forecast output o Unclear or incomplete documentation ● If you solved any of the issues, explain how (e.g., modifying code, installing packages, adjusting paths).
Feedback	● **Goal:** Provide constructive recommendations for improving the project. ● In this section, you should: ○ Highlight what was well-documented and easy to follow ○ Identify areas where clearer instructions, comments, or explanations would help future users ○ Suggest improvements to readability, organization, or reproducibility ○ Frame feedback as collaborative and supportive