

## Case Study Rubric

**Instructor: Loreto Alonzi**

**Due: TBD**

**Submission format: Upload PDF of report and link to GitHub repo to Canvas**

### Individual Assignment

**Why am I doing this?** This case study is an opportunity to use your data science knowledge in a real-world scenario and experience any challenges that may come with the task. Using skills you've developed in your courses, you will complete a project and put together a professional report with your results. This study will also expose you to time series analysis which can be an important tool in data analytics.

**What am I going to do?** The necessary data and code for this project can be found at [https://github.com/KAdH12/DS4002\\_CS3](https://github.com/KAdH12/DS4002_CS3). Using historical egg price data, you will carry out all of the steps of time series analysis using ARIMA modeling in order to predict the trend of future egg prices. You will create multiple graphs for this analysis including time series, ACF, and PACF plots to check for stationarity as well as plots showing the forecasted egg prices. You will also evaluate the model using RMSE and MAE values to determine the accuracy of time series for this task. Deliverables include:

- Written report PDF
- GitHub repository- containing all code and output

### Tips for success:

- Don't be afraid to ask for help. You may have never done time series analysis before and that is okay. It may be necessary to get help from an instructor or fellow classmate. Researching time series and ARIMA models may also be useful for this study.
- Read through all the provided materials carefully. There is a lot of code, resources, and output associated with this case study. Familiarize yourself with each part before diving in.

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

Spec Category	Spec Details
Formatting	<ul style="list-style-type: none"><li>• Written Report<ul style="list-style-type: none"><li>○ Submit the report as a PDF file</li><li>○ Two pages maximum</li></ul></li><li>• GitHub Repository containing all materials<ul style="list-style-type: none"><li>○ Submit a link to the repo</li><li>○ Contents<ul style="list-style-type: none"><li>■ DATA (all data files)</li><li>■ CODE (any necessary code)</li><li>■ OUTPUT (any graphs or tables produced)</li><li>■ Written Report</li><li>■ README.md</li></ul></li><li>○ Use PDF format where possible</li></ul></li></ul>

	<ul style="list-style-type: none"> <li>○ Use appropriate format for any data and code</li> </ul>
Written Report	<ul style="list-style-type: none"> <li>● Give a brief background of the subject and why the report was created based on the case study motivation and resources provided (one paragraph)</li> <li>● Explain the time series analysis process and how it was used on the historical egg prices (one or two paragraphs) <ul style="list-style-type: none"> <li>○ Describe the data in this section as well</li> </ul> </li> <li>● Provide the results of the analysis including the forecasted prices, the evaluation metrics, and any recommendations you have based on these findings (one or two paragraphs) <ul style="list-style-type: none"> <li>○ Include any important graphs and figures in this section</li> </ul> </li> <li>● References <ul style="list-style-type: none"> <li>○ Include any references used on a separate page at the end of the file</li> </ul> </li> </ul>
GitHub Repository	<ul style="list-style-type: none"> <li>● DATA folder <ul style="list-style-type: none"> <li>○ Include all versions of any data used for the project</li> </ul> </li> <li>● CODE folder <ul style="list-style-type: none"> <li>○ Include any scripts containing code used for the project</li> </ul> </li> <li>● OUTPUT <ul style="list-style-type: none"> <li>○ Include any graphs or visuals produced throughout the process</li> </ul> </li> <li>● Written Report <ul style="list-style-type: none"> <li>○ Include a PDF of the report. This should be on the main page and not hidden in any folder.</li> </ul> </li> <li>● README.md <ul style="list-style-type: none"> <li>○ This should give a clear description of everything located in the repository and what you did. It doesn't have to be too detailed but should orient people to your repository.</li> </ul> </li> <li>● Everything should be labeled clearly and be easy to find.</li> </ul>