

References

1. Some background information for this project can be found on the following URL:
<https://static.googleusercontent.com/media/research.google.com/en//pubs/archive/45530.pdf>
2. Some information on collaborative filtering can be found on the following webpage:
https://en.wikipedia.org/wiki/Collaborative_filtering
3. Some information on recall in the context of information retrieval can be found on the following webpage: https://en.wikipedia.org/wiki/Precision_and_recall
4. Some information on A/B testing can be found on the following webpage:
https://en.wikipedia.org/wiki/A/B_testing
5. Some information on matrix factorization in the context of recommendation systems can be found on the following webpage:
[https://en.wikipedia.org/wiki/Matrix_factorization_\(recommender_systems\)](https://en.wikipedia.org/wiki/Matrix_factorization_(recommender_systems))
6. Some more information on matrix factorization can be found on the following webpage:
<https://developers.google.com/machine-learning/recommendation/collaborative/matrix>
7. Some information on rank loss can be found on the following webpage:
https://gombu.github.io/2019/04/03/ranking_loss/
8. Some information relating to non-linear matrix factorization can be found on the following URL:
<https://arxiv.org/pdf/1710.05613.pdf>
9. Some information relating to extreme multiclass classification can be found on the following webpage: <https://www.microsoft.com/en-us/research/blog/everything-you-always-wanted-to-know-about-extreme-classification-but-were-afraid-to-ask/>
10. Information relating to embeddings in the context of recommendation systems can be found on the following webpage: <https://towardsdatascience.com/recommender-systems-from-learned-embeddings-f1d12288f278>
11. Some information on the softmax function can be found on the following webpage:
https://en.wikipedia.org/wiki/Softmax_function
12. Some information relating to softmax classifiers can be found on the following webpage:
<https://www.pyimagesearch.com/2016/09/12/softmax-classifiers-explained/>
13. Some information related to negative classes in the context of recommendation systems can be found on the following URL: <https://arxiv.org/pdf/1812.11422.pdf>
14. Some information related to negative sampling can be found on the following webpage:
<https://medium.com/@2j/negative-sampling-in-numpy-18a9ad810385>
15. Information on importance weighting can be found on the following webpage:
https://wiki.analytica.com/Importance_weights
16. Some information on cross-entropy loss can be found on the following webpage:
<https://machinelearningmastery.com/cross-entropy-for-machine-learning/>
17. Some more information on the softmax function can be found on the following webpage:
<https://deeptai.org/machine-learning-glossary-and-terms/softmax-layer>
18. Some information on hierarchical softmax can be found on the following webpage:
<http://building-babylon.net/2017/08/01/hierarchical-softmax/>
19. Some more information on hierarchical softmax can be found on the following webpage:
<https://www.quora.com/What-is-hierarchical-softmax>
20. Some information on sublinear functions can be found on the following webpage:
https://en.wikipedia.org/wiki/Sublinear_function

21. Some more information relating to sublinear functions can be found on the following webpage:
<https://softwareengineering.stackexchange.com/questions/347748/can-sub-linear-still-be-a-straight-line>
22. Some information on locality-sensitive hashing can be found on the following webpage:
https://en.wikipedia.org/wiki/Locality-sensitive_hashing
23. Some information relating to hash functions in the context of computer science can be found on the following webpage: https://en.wikipedia.org/wiki/Hash_function
24. Some information on calibrating probabilities for imbalanced classification can be found on the following webpage: <https://machinelearningmastery.com/probability-calibration-for-imbalanced-classification/>
25. Some information on dot products can be found on the following webpage:
https://en.wikipedia.org/wiki/Dot_product
26. Some information on inner product space can be found on the following webpage:
https://en.wikipedia.org/wiki/Inner_product_space
27. Some information on nearest neighbor search (NNS) can be found on the following webpage:
https://en.wikipedia.org/wiki/Nearest_neighbor_search
28. Some information on the continuous bag of words (CBOW) model can be found on the following webpage: <https://www.kdnuggets.com/2018/04/implementing-deep-learning-methods-feature-engineering-text-data-cbow.html>
29. Some more information on the continuous bag of words (CBOW) model can be found on the following webpage: <https://analyticsindiamag.com/the-continuous-bag-of-words-cbow-model-in-nlp-hands-on-implementation-with-codes/>
30. Some information on feedforward neural networks can be found on the following webpage:
https://en.wikipedia.org/wiki/Feedforward_neural_network
31. Some information on gradient descent and backpropagation can be found on the following webpage: <https://towardsdatascience.com/an-introduction-to-gradient-descent-and-backpropagation-81648bdb19b2>
32. Some more information on gradient descent and backpropagation can be found on the following webpage: <https://towardsdatascience.com/a-step-by-step-implementation-of-gradient-descent-and-backpropagation-d58bda486110>
33. Some information focusing on backpropagation can be found on the following webpage:
<https://en.wikipedia.org/wiki/Backpropagation>
34. Some information on loss functions can be found on the following webpage:
https://en.wikipedia.org/wiki/Loss_function
35. Some information on rectified linear units (ReLU) can be found on the following webpage:
<https://machinelearningmastery.com/rectified-linear-activation-function-for-deep-learning-neural-networks/>
36. Information on dense and sparse features in the context of recommendation systems can be found on the following webpage: <https://quoraengineering.quora.com/Unifying-dense-and-sparse-features-for-neural-networks#:~:text=Dense%20features%20incorporate%20information%20from,models%20%5B1%5D%20and%20etc.>
37. Some information on the meanings of “dense” and “sparse” in the context of neural networks can be found on the following webpage:

<https://stats.stackexchange.com/questions/266996/what-do-the-terms-dense-and-sparse-mean-in-the-context-of-neural-networks>

38. Some information on fully connected deep networks can be found on the following webpage: <https://www.oreilly.com/library/view/tensorflow-for-deep/9781491980446/ch04.html>
39. Some information on loss functions, including cross-entropy loss, can be found on the following webpage: https://ml-cheatsheet.readthedocs.io/en/latest/loss_functions.html
40. An explanation on how cross-entropy loss is calculated can be found on the following webpage: <https://datascience.stackexchange.com/questions/20296/cross-entropy-loss-explanation>
41. Some information on how gradient descent is calculated can be found on the following webpage: <https://www.mygreatlearning.com/blog/gradient-descent/>
42. Some more information on how gradient descent is calculated can be found on the following webpage: <https://www.kdnuggets.com/2017/04/simple-understand-gradient-descent-algorithm.html>
43. Some information on approximate nearest neighbor searches can be found on the following webpage: https://en.wikipedia.org/wiki/Nearest_neighbor_search
44. Some information on tokenization in the context of recommendation systems can be found on the following webpage: <https://www.themarketingtechnologist.co/a-recommendation-system-for-blogs-content-based-similarity-part-2/>
45. Some information on priors in the context of recommendation systems can be found on the following webpage: <https://towardsdatascience.com/introduction-to-recommender-systems-6c66cf15ada>
46. Some information on first-order effects can be found on the following webpage: <http://www.tjwaldorf.com/how-we-make-decisions-first-order-consequences/#:~:text=First%2Dorder%20consequence%3D%20the%20most,term%20effects%20of%20the%20decision.>
47. Some information on surrogate models can be found on the following webpage: https://en.wikipedia.org/wiki/Surrogate_model
48. Some information on closed-form functions (or the idea of tractability) can be found on the following webpage: https://en.wikipedia.org/wiki/Closed-form_expression
49. Some information on linear factorization can be found on the following webpage: https://www.mathwords.com/l/linear_factorization.htm
50. Some information on a linear polynomial can be found on the following webpage: https://www.mathwords.com/l/linear_polynomial.htm
51. Some information on open-source recommendation systems can be found on the following webpage: <https://analyticsindiamag.com/5-open-source-recommender-systems-you-should-try-for-your-next-project/>
52. Some information on piecewise linear functions can be found on the following webpage: https://en.wikipedia.org/wiki/Piecewise_linear_function
53. Some information on impressions in the context of Google ads can be found on the following webpage: <https://support.google.com/google-ads/answer/6320?hl=en>
54. Some more information on impressions in the context of Google search results can be found on the following webpage: <https://support.google.com/webmasters/answer/7042828?hl=en>

55. Some information on embeddings in the context of categorical data can be found on the following webpage: <https://towardsdatascience.com/categorical-embedding-and-transfer-learning-dd3c4af6345d>
56. Some information on recommendation systems within the context of online advertising can be found on the following web address: <https://tel.archives-ouvertes.fr/tel-02060436/document>
57. Some information on ad rank can be found on the following webpage: <https://support.google.com/google-ads/answer/1752122?hl=en>
58. Some information on ad position and ad ranks can be found on the following webpage: <https://support.google.com/google-ads/answer/1722122?hl=en>
59. Some information on lookup tables can be found on the following webpage: https://en.wikipedia.org/wiki/Lookup_table
60. Some information on creating embeddings can be found on the following webpage: <https://developers.google.com/machine-learning/clustering/similarity/generating-embeddings-example>
61. Some information on categorical features can be found on the following webpage: <https://www.datacamp.com/community/tutorials/categorical-data>
62. Some information on linear interpolation can be found on the following webpage: https://en.wikipedia.org/wiki/Linear_interpolation
63. Some information on weighted logistic regression can be found on the following webpage: <https://stats.stackexchange.com/questions/442796/what-does-weighted-logistic-regression-mean>
64. Some more information on weighted logistic regression can be found on the following webpage: <https://towardsdatascience.com/weighted-logistic-regression-for-imbalanced-dataset-9a5cd88e68b>
65. Some information on asymmetric distributions can be found on the following webpage: <https://www.investopedia.com/terms/a/asymmetrical-distribution.asp>
66. Some information on how to calculate cross-entropy loss can be found on the following webpage: <https://towardsdatascience.com/cross-entropy-for-dummies-5189303c7735>
67. Some information on designing recommendation systems can be found on the following webpage: <https://madasamy.medium.com/introduction-to-recommendation-systems-and-how-to-design-recommendation-system-that-resembling-the-9ac167e30e95>
68. Some information on how to create a recommendation system in Python can be found on the following webpage: <https://www.datacamp.com/community/tutorials/recommender-systems-python>
69. Some information on cosine similarity can be found on the following webpage: <https://medium.com/acing-ai/what-is-cosine-similarity-matrix-f0819e674ad1>
70. Some information on cosine similarity in the context of sklearn can be found on the following webpage: https://scikit-learn.org/stable/modules/generated/sklearn.metrics.pairwise.cosine_similarity.html
71. Some more information on cosine similarity can be found on the following webpage: https://en.wikipedia.org/wiki/Cosine_similarity
72. Some information on term frequency-inverse document frequency (TF-IDF) can be found on the following webpage: <https://en.wikipedia.org/wiki/Tf%E2%80%93idf>

73. Some information on distance similarity measures implemented in machine learning can be found on the following webpage: <https://medium.com/@gshriya195/top-5-distance-similarity-measures-implementation-in-machine-learning-1f68b9ecb0a3>
74. Information on creating a collaborative recommendation system in Python can be found on the following webpage: <https://realpython.com/build-recommendation-engine-collaborative-filtering/>
75. The dataset used to practice the recommendation systems presented by Mr. Aditya Sharma on datacamp.com can be found on the following webpage: <https://www.kaggle.com/rounakbanik/the-movies-dataset/data>
76. Some information on how to update the Spyder IDE within the Anaconda distribution can be found on the following webpage: <https://stackoverflow.com/questions/41849718/how-to-update-spyder-on-anaconda>
77. Information on how to update Anaconda can be found on the following webpage: <https://docs.anaconda.com/anaconda/install/update-version/>
78. Information on how to update the Anaconda Navigator can be found on the following webpage: <https://docs.anaconda.com/anaconda/navigator/update-navigator/>
79. Some information on the low_memory argument for the read_csv() function of the pandas library/package for Python can be found on the following webpage: https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.read_csv.html
80. Some information on the print() function in Python can be found on the following webpage: <https://realpython.com/python-print/>
81. Some information on how to showcase all columns in a pandas dataframe can be found on the following webpage: <https://stackoverflow.com/questions/49188960/how-to-show-all-of-columns-name-on-pandas-dataframe>
82. Some information on Root Mean Square Error (RMSE) can be found on the following webpage: <https://www.statisticshowto.com/probability-and-statistics/regression-analysis/rmse-root-mean-square-error/>
83. Some information on Mean Absolute Error (MAE) can be found on the following webpage: https://en.wikipedia.org/wiki/Mean_absolute_error
84. Some information relating to the comparison of Root Mean Square Error (RMSE) and Mean Absolute Error (MAE) can be found on the following webpage: http://www.eumetrain.org/data/4/451/english/msg/ver_cont_var/uos3/uos3_ko1.htm
85. Some information relating to the comparison of Mean Absolute Error (MAE), Mean Square Error (MSE), and Root Mean Square Error (RMSE) can be found on the following webpage: <https://www.studytonight.com/post/what-is-mean-squared-error-mean-absolute-error-root-mean-squared-error-and-r-squared>
86. Some information on the function/method pandas.DataFrame.loc can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.loc.html>
87. Some information on the function/method pandas.DataFrame.copy can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.copy.html>

88. Some information on the function/method `pandas.DataFrame.apply` can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.apply.html>
89. Some more information on term frequency-inverse document frequency (TF-IDF) can be found on the following webpage: <https://monkeylearn.com/blog/what-is-tf-idf/>
90. Even more information on term frequency-inverse document frequency (TF-IDF) can be found on the following webpage: <http://www.tfidf.com/>
91. Some information on row vectors can be found on the following webpage: <https://stattrek.com/statistics/dictionary.aspx?definition=row-vector>
92. Some information on the logarithm can be found on the following webpage: <https://en.wikipedia.org/wiki/Logarithm>
93. Some information on cosine distance, cosine similarity, angular cosine distance, and angular cosine similarity can be found on the following webpage: <https://www.itl.nist.gov/div898/software/dataplot/refman2/auxillar/cosdist.htm>
94. Some information on the difference between long data format and wide data format can be found on the following webpage: <https://discuss.analyticsvidhya.com/t/difference-between-wide-and-long-data-format/8110>
95. Some information on singular value decomposition (SVD) can be found on the following webpage: https://en.wikipedia.org/wiki/Singular_value_decomposition
96. Some more information on singular value decomposition (SVD) can be found on the following URL: <https://www.cs.cmu.edu/~venkatg/teaching/CStheory-infoage/book-chapter-4.pdf>
97. Some information on matrix rank can be found on the following webpage: <https://stattrek.com/matrix-algebra/matrix-rank.aspx>
98. Some information on the linear dependence of vectors can be found on the following webpage: https://stattrek.com/statistics/dictionary.aspx?definition=Linear_dependence_of_vectors
99. Some information on an error message that relates to length of passed values and what the index implies can be found on the following webpage: <https://stackoverflow.com/questions/54754887/valueerror-length-of-passed-values-is-7-index-implies-0>
100. Some information on the `len()` function in Python can be found on the following webpage: <https://www.educative.io/edpresso/how-to-find-the-length-of-a-string-in-python>
101. Some information on the class `pandas.Series()` for Python can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.Series.html>
102. Some information on indexing and selecting data in pandas can be found on the following webpage: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html
103. Some information on precision and recall can be found on the following webpage: https://en.wikipedia.org/wiki/Precision_and_recall
104. Some information on the `enumerate()` function in Python can be found on the following webpage: <https://realpython.com/python-enumerate/>
105. Some more information on the `enumerate()` function in Python can be found on the following webpage: <https://www.geeksforgeeks.org/enumerate-in-python/>
106. Some information on the lambda function in Python can be found on the following webpage: https://www.w3schools.com/python/python_lambda.asp

107. Some information on selecting rows or columns in a Pandas DataFrame using either name or index can be found on the following webpage: <https://thispointer.com/select-rows-columns-by-name-or-index-in-dataframe-using-loc-iloc-python-pandas/>
108. Some information on how to acquire the column names of a pandas DataFrame can be found on the following webpage: <https://www.marsja.se/how-to-get-the-column-names-from-a-pandas-dataframe-print-and-list/>
109. Some information on converting a list to a string in Python can be found on the following webpage: <https://www.simplilearn.com/tutorials/python-tutorial/list-to-string-in-python>
110. Some information on the ast module in Python can be found on the following webpage: <https://docs.python.org/3/library/ast.html>
111. Some information on the isinstance() function in Python can be found on the following webpage: <https://careerkarma.com/blog/python-isinstance/>
112. Some more information on the isinstance() function in Python can be found on the following webpage: https://www.w3schools.com/python/ref_func_isinstance.asp
113. Some information on joining strings using the join() function in Python can be found on the following webpage: <https://www.geeksforgeeks.org/join-function-python/>
114. Some information on using double brackets with a pandas DataFrame to select a column can be found on the following webpage: <https://stackoverflow.com/questions/33417991/pandas-why-are-double-brackets-needed-to-select-column-after-boolean-indexing>
115. Some information on how to delete a variable in Python can be found on the following webpage: <https://www.guru99.com/variables-in-python.html>
116. Some information on how to install scikit-surprise for Anaconda can be found on the following webpage: <https://anaconda.org/conda-forge/scikit-surprise>
117. Some information on the __pycache__ folder can be found on the following webpage: <https://stackoverflow.com/questions/16869024/what-is-pycache>
118. Some information on root mean square error (RMSE) can be found on the following webpage: <https://www.statisticshowto.com/probability-and-statistics/regression-analysis/rmse-root-mean-square-error/>
119. Some lines of code were reused between practice scripts by Brian Mallari in order to avoid having to type out some content all over again
120. Some sources of data for recommendation systems can be found on the following webpage: <https://github.com/caserec/Datasets-for-Recommender-Systems>
121. Data relating to Retailrocket that can be used for recommendation systems can be found on the following webpage: <https://www.kaggle.com/retailrocket/ecommerce-dataset>
122. Data relating to Steam video games that can be used for recommendation systems can be found on the following webpage: <https://www.kaggle.com/tamber/steam-video-games/data>
123. Data relating to anime that can be used for recommendation systems can be found on the following webpage: <https://www.kaggle.com/CooperUnion/anime-recommendations-database>
124. Some information on recommendation systems can be found on the LinkedIn Learning Course 'Building a Recommendation System with Python Machine Learning & AI' by Lillian Pierson, P.E. at the following URL (a LinkedIn Premium account may be required to access this

content): <https://www.linkedin.com/learning/building-a-recommendation-system-with-python-machine-learning-ai/>

125. Some information on merging, joining, concatenating, and comparing pandas data frames in Python can be found on the following webpage: https://pandas.pydata.org/pandas-docs/stable/user_guide/merging.html
126. Some information on the range() function in Python can be found on the following webpage: https://www.w3schools.com/python/ref_func_range.asp
127. Some information on tuples in Python can be found on the following webpage: https://www.w3schools.com/python/python_tuples.asp
128. Some information on how to create a tuple in Python using the range() function can be found on the following webpage: <https://pythonexamples.org/python-create-tuple/>
129. Some information on how to the error AttributeError: 'DataFrame' object has no attribute 'ix' in Python can be found on the following webpage: <https://stackoverflow.com/questions/59991397/attributeerror-dataframe-object-has-no-attribute-ix>
130. Some information on how to resolve the error IndexingError: Too many indexers can be found on the following webpage: <https://stackoverflow.com/questions/53408148/pandas-core-indexing-indexingerror-too-many-indexers>
131. Some information on lists in Python can be found on the following webpage: https://www.w3schools.com/python/python_lists.asp
132. Some information on how to resolve the error Error in Python script "Expected 2D array, got 1D array instead.?" in Python can be found on the following webpage: <https://stackoverflow.com/questions/45554008/error-in-python-script-expected-2d-array-got-1d-array-instead/45554153>
133. Some information on identifying the data type of an object in Python can be found on the following webpage: https://www.w3schools.com/python/python_datatypes.asp
134. Some information on how to resolve the issue of the reshape() function from the numpy package for Python not working properly can be found on the following webpage: <https://stackoverflow.com/questions/13282778/why-doesnt-the-shape-of-my-numpy-array-change>
135. Some information on orthogonal matrices can be found on the following webpage: https://en.wikipedia.org/wiki/Orthogonal_matrix
136. Some movie data used for practicing recommendation systems by way of the LinkedIn Learning course titled 'Building a Recommendation System with Python Machine Learning & AI' by Lillian Pierson, P.E. can be found on the following webpage: <https://grouplens.org/datasets/movielens/100k/>
137. Some information on logical operators in Python can be found on the following webpage: <https://www.geeksforgeeks.org/python-logical-operators-with-examples-improvement-needed/>
138. Some more information on logical operators in Python can be found on the following webpage: <https://appdividend.com/2021/04/06/what-is-logical-and-operator-in-python/>
139. Some information on the difference between 'and' and '&' in Python can be found on the following webpage: <https://www.geeksforgeeks.org/difference-between-and-and-in-python/>

140. Some information on how to convert a numpy array to a pandas data frame in Python can be found on the following webpage: <https://datatofish.com/numpy-array-to-pandas-dataframe/>
141. Some lines of code were reused from some of the practice scripts to the project scripts by Brian Mallari in order to avoid having to type out some content all over again
142. Some information on how to install the pandas package for Python can be found on the following webpage: https://pandas.pydata.org/docs/getting_started/install.html
143. Some information on how to add column names to a pandas dataframe in Python can be found on the following webpage: <https://www.geeksforgeeks.org/add-column-names-to-dataframe-in-pandas/>
144. Some information on how to import the contents of a .csv file into a pandas dataframe for Python when the .csv file has no headers can be found on the following webpage: <https://www.edureka.co/community/42836/how-to-read-pandas-csv-file-with-no-header>
145. Some information on the read_csv() function of the pandas module for Python can be found on the following webpage: https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.read_csv.html
146. Some information on how to acquire some summary statistics with pandas for Python can be found on the following webpage: https://pandas.pydata.org/docs/getting_started/intro_tutorials/06_calculate_statistics.html
147. Some information on how to acquire some descriptive statistics with pandas for Python can be found on the following webpage: https://www.tutorialspoint.com/python_pandas/python_pandas_descriptive_statistics.htm
148. Some information on how to change the data types for columns in a pandas dataframe for Python can be found on the following webpage: <https://stackoverflow.com/questions/15891038/change-column-type-in-pandas>
149. Some information on how to remove a column from a pandas dataframe for Python can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.drop.html>
150. Some information on how to identify the data type for each column in a pandas dataframe for Python can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.dtypes.html>
151. Some information on how to delete a variable in Python can be found on the following webpage: <https://www.kite.com/python/answers/how-to-delete-variables-and-functions-from-memory-in-python>
152. Some information on how to filter a pandas dataframe in Python using multiple conditions can be found on the following webpage: <https://www.geeksforgeeks.org/filter-pandas-dataframe-with-multiple-conditions/>
153. Some more information on how to filter a pandas dataframe in Python based on conditions can be found on the following webpage: <https://www.geeksforgeeks.org/selecting-rows-in-pandas-dataframe-based-on-conditions/>
154. Some information on how to rename a specific column in a pandas dataframe for Python can be found on the following webpage: <https://www.geeksforgeeks.org/rename-specific-columns-in-pandas/>

155. Some information on how to rename a specific column in a pandas dataframe for Python can be found on the following webpage: <https://www.geeksforgeeks.org/rename-column-by-index-in-pandas/>
156. Some more information on how to rename a specific column in a pandas dataframe for Python can be found on the following webpage: <https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.DataFrame.rename.html>
157. Some information on how to change a pandas series to a pandas dataframe for Python can be found on the following webpage: https://pandas.pydata.org/docs/reference/api/pandas.Series.to_frame.html
158. Some information on the join() function in the pandas dataframe object for Python can be found on the following webpage: <https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.join.html>
159. Some information on the merge() function in the pandas dataframe object for Python can be found on the following webpage: <https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.merge.html>
160. Some information on how to reset the settings for Spyder after an update or a full reinstall can be found on the following webpage: <https://stackoverflow.com/questions/9747158/python-spyder-reset>
161. Some information on how to sort rows of a Pandas dataframe in Python can be found on the following webpage: https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.sort_values.html
162. Some information on how to convert a variable name to a string in Python can be found on the following webpage: <https://stackoverflow.com/questions/1534504/convert-variable-name-to-string>
163. Some information on how to install Jupyter Notebook as a standalone application can be found on the following webpage: <https://jupyter.org/install>
164. Some information on how to run Jupyter Notebook can be found on the following webpage: <https://jupyter.readthedocs.io/en/latest/running.html#running>
165. Some information on Jupyter Notebook can be found on the LinkedIn Learning Course 'Introducing Jupyter' by Josh McQuiston at the following URL (a LinkedIn Premium account may be required to access this content): <https://www.linkedin.com/learning/introducing-jupyter/>
166. Some information on the difference between edit mode and command mode in Jupyter Notebook can be found on the following webpage: <https://jupyter-notebook.readthedocs.io/en/stable/examples/Notebook/Notebook%20Basics.html>
167. Some information on magic commands for Jupyter Notebook can be found on the following webpage: <https://ipython.readthedocs.io/en/stable/interactive/magics.html>
168. Some more information on magic commands for Jupyter Notebook can be found on the following webpage: https://www.tutorialspoint.com/jupyter/ipython_magic_commands.htm
169. Some information on how to create a newline in a Jupyter Notebook cell in Markup mode can be found on the following webpage: <https://stackoverflow.com/questions/41906199/how-to-make-a-new-line-in-a-jupyter-markdown-cell>

170. Some information on how to include an image in Jupyter Notebook can be found on the following webpage: <https://stackoverflow.com/questions/32370281/how-to-embed-image-or-picture-in-jupyter-notebook-either-from-a-local-machine-o>
171. Some more information on how to include an image in Jupyter Notebook can be found on the following webpage: <https://ealizadeh.com/blog/3-ways-to-add-images-to-your-jupyter-notebook>
172. Even more information on how to include an image in Jupyter Notebook can be found on the following webpage: <https://stackoverflow.com/questions/10628262/inserting-image-into-ipython-notebook-markdown>
173. Some information on how to create a numbered list in Jupyter Notebook can be found on the following webpage: <https://stackoverflow.com/questions/35797582/list-numbering-jupyter-notebook-markdown>
174. Some information on how to convert a Jupyter Notebook into a PDF can be found on the following webpage: <https://pypi.org/project/notebook-as-pdf/>
175. A tool for converting an image to base64 can be found on the following webpage: <https://www.base64-image.de/>
176. Some information on how to comment out lines in a Markdown cell in Jupyter Notebook can be found on the following webpage: <https://stackoverflow.com/questions/32444840/jupyter-how-to-comment-out-cells#:~:text=Mark%20the%20content%20of%20the,all%20lines%20in%20that%20cell>.
177. Some information on the pandas DataFrame can be found on the following webpage: <https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.html>
178. Some information on how to change the Python interpreter in Jupyter Notebook can be found on the following webpage: <https://stackoverflow.com/questions/58645807/change-interpreter-in-jupyter-notebook>
179. Some information on function arguments can be found on the following webpage: https://en.wikipedia.org/wiki/Argument_of_a_function
180. Some information on the rules for capitalizing words in a title can be found on the following webpage: https://www.scribendi.com/academy/articles/what_to_capitalize_in_a_title.en.html
181. Some information on rules for capitalizing words in a title or a header can be found on the following webpage: <https://www.webucator.com/article/how-to-capitalize-headings-and-titles/>