Feedback for Assignment 1: Identify the Data Cycle Steps of a Specific Application

Dropbox Feedback

Overall Feedback

Hello Nathan,

Thanks for the submission. I liked the way you contrast data science vs. traditional analytics and you explain the life-cycle idea in simple terms. In the introduction, you cited IBM for the definition of data science, which is fine, but the introduction could be stronger if it had 1–2 domain references tied to predictive maintenance or utility asset management (even general ones).

You defined the business problem clearly. I liked the way you explain why fixed schedules and purely reactive maintenance are not ideal, and you keep your goal realistic. This section would be stronger if you made the target decision a bit more concrete. You say maintenance and replacement decisions, but I want to know: what exactly is the model predicting or ranking? Failure in the next 6 months? Misoperation risk? Probability of failure?

For the data understanding, you had a good overview of typical utility datasets, and I liked that you mentioned decades-long asset life cycles, because that screams data quality changes over time, which you later address.

Since you mentioned imbalance, I expected one extra line on what the label is. Like, what counts as a failure event? A relay misoperation? Breaker failure to trip?

I like that you explicitly say historical prioritization can bias the data; this is a great point many students miss. This would be stronger if you gave one example of what that bias looks like. Like, assets inspected more often look higher risk simply because we have more data on them.

For the data preprocessing, you covered the right themes: centralized environment, access control, auditability, and lineage/versioning. The biggest gap is that it stays generic. A grader might want one example of what integration means here: joining outage events to the nearest upstream breaker, or mapping multiple ID formats to a master asset ID.

Overall, this is a well-written, well-structured CRISP-DM paper that stays in the right lane. The best thing about it is the consistent theme: interpretability, robustness, decision support, and respect for engineering judgment. You don't need real data, but you do need a few concrete examples: what exactly is the target outcome, what does the model output look like, what are a few example fields, and what does the workflow look like after the model produces results.

Rubric Name: Assignment 1, 2 Rubric

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Criteria	Exceeds Expectations (90%-100%) A. A-	Meets Expectations (80%-89%) B+, B, B-	Needs Improvement (73%-79%) C+, C	Deficient (40%-72%) C-. F	Not Evident (0%-39%) F	Criterion Score
Demonstration of understanding of concepts covered in the class material in conjunction with critical thinking that allows evaluation, application, and review of business and scientific cases.	3 points The paper demonstrates that the author fully understands and has applied concepts learned in the course. Concepts are integrated into the writer's own insights. Ties together information from all sources. Paper flows from one issue to the next without the need for headings. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	2.6 points The paper demonstrates that the author, for the most part, understands and has applied concepts learned in the course. Some of the conclusions, however, are not supported in the body of the paper. For the most part, ties together information from all sources. Paper flows with only some disjointedness. Author's writing demonstrates an understanding of the relationship among material obtained from all sources. ✓	2.3 points The paper demonstrates that the author, to a certain extent, understands and has applied concepts learned in the course. Sometimes ties together information from all sources. Paper does not flow - disjointedness is apparent. Author's writing does not demonstrate an understanding of the relationship among material obtained from all sources.	1.2 points The author doesn't fully understands and has applied concepts learned in the course. One of the definitions, steps and explanation are confusing and non related. Paper does not flow - disjointedness is apparent. Author's writing does not demonstrate an understanding of the relationship among material obtained from all sources.	0 points The paper does not demonstrate that the author has fully understood and applied concepts learned in the course. Does not tie together information. Paper does not flow and appears to be created from disparate issues. Headings are necessary to link concepts. Writing does not demonstrate understanding any of the concepts, terms and processes.	2.6 / 3
Assignment Instructions	2 points Correctly completed all the assignment instructions. ✓	1.7 points Correctly completed most of the assignment instructions.	1.5 points Incorrectly completed some parts of the assignment.	0.8 points Incorrectly completed most parts of the assignment.	0 points Not attempted or needs major substantial improvement overall.	2 / 2
Content and Critical Thinking	1 point Strong evidence of content knowledge. Responses were thoughtful, thorough, and well-reasoned. ✓	0.85 points Good evidence of content knowledge. In general, improvement in responses to demonstrate critical thinking is needed.	0.75 points Some evidence of content knowledge. Some improvement is needed to show adequate understanding of content and the use of critical thinking.	0.4 points Little evidence of content knowledge. Significant improvement is needed to show adequate understanding of content and the use of critical thinking.	0 points Not attempted or needs major substantial improvement overall.	1 / 1
Cohesion & Organization	1 point Effectively communicates a central idea or point that is present throughout the entirety of the assignment, in a coherent and logical manner. Overall writing is easy to understand. ✓	0.85 points Communicates a central idea or point that is present through most of the assignment in a coherent manner. Overall writing, for the most part, is easy to understand.	0.75 points Communicates a central idea or point in the assignment but may incorporate other unrelated topics. Coherence and organization are somewhat evident.	0.4 points Communicates several unconnected ideas or points, with no apparent pattern or coherence.	0 points Does not display a sense of organization or coherence. Non-existent, or lacks clear expression of relevant ideas or points.	1 / 1
Grammar, Mechanics, Formatting, APA, Integration of Resources	1 point No misspelled words, grammatical errors, formatting issues, or APA style errors. All resources are scholarly and appropriate for the assignment. ✓	0.85 points Some misspelled words, grammatical errors, formatting issues, or APA style errors. Most resources are scholarly and appropriate for the assignment.	0.75 points Many misspelled words, grammatical errors, formatting issues, or APA style errors. Some resources are not scholarly or appropriate for the assignment.	0.4 points Significant number of misspelled words, grammatical errors, formatting issues, or APA style errors. Most resources are not scholarly or appropriate for the assignment.	0 points Not attempted or needs major substantial improvement overall.	1 / 1
Total						7.6 / 8

Overall Score

Exceeds Expectation (90-100%) A, A- ✓ | Meets Expectations (80%-89%) B+, B, B- | Needs Improvement (73%-79%) C+, C | Deficient (40%-72%) C-, F | Not Evident (0%-39%) F

Score
7.7 / 8 - A

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