

## DAT 650 Final Project Guidelines and Rubric

### Overview

Your assignment for this course is to place yourself in the role of a data professional. You have been assigned an organization and provided analysis data from within the organization. Your job, now, is to develop a data analysis enterprise strategy that will create business value from existing data sources. At the very end, you will create an executive brief in the form of a presentation. This presentation will be a summary of your plan, the results of your pilot, and an explanation of the value that the analytic solution could add to your organization. Throughout the course, you will be responsible for completing formative milestones that will allow opportunities for instructor feedback and submission improvement that will be used to inform the final submission.

The project is divided into four milestones, which will be submitted at various points throughout the course to scaffold learning and ensure quality final submissions. These milestones will be submitted in Modules Two, Four, Six, and Eight. The final project will be submitted in Module Nine.

In this assignment, you will demonstrate your mastery of the following course outcomes:

- Defend the value and purpose of data collection and analytics structures for institutional and organizational progress
- Evaluate data analytic architectures for potential ethical concerns for identification of software solutions
- Create models within various environments by assessing the applicability and value of data strategies
- Create pilot data analytic solution stack plans that address identified organizational data issues
- Present proposals for full implementation of data analytic solution stacks based on identified data needs and pilot outcomes

### Prompt

You have been tasked with developing a data analysis enterprise strategy that will add business value. Business value, in this assessment, is the value or benefit added to your organization from the incorporation and use of a data strategy. Develop an architecture and strategy, and then convince the organizational executives that your plan will add necessary value to the organization.

For information about the use case scenarios available to develop your data analytic solution, see the Use Cases document and accompanying data sets in the Assignment Guidelines and Rubrics folder in the Start Here area of your course.

Specifically, the following **critical elements** must be addressed (note that because you may approach your process differently than someone else, it is not required that you complete the elements in the order proposed here):



- I. Identify data sources and analytic structures that generate business value.
  - a. Describe how the given **data sources** could potentially provide **business value** for your organization. Include an explanation of how the **CRISP-DM** process will enable proper execution.
  - b. Given the organizational context and the list of available data and sources, describe the purpose behind the descriptive and predictive **analytic structure** you will use. Explain how the structure fits the organization and how it could provide additional support, benefits, and values for the organization as a whole.
  - c. Based on your experience and knowledge, propose **analytic tools** to use in your data research and modeling. What elements factor into your consideration in choosing this tool?
  - d. What **additional data fields** would you like to include in your model that are not in the given data set? How will these fields add value in combination with your current data? Be sure to cite examples and support your reasoning.
- II. Evaluate potential ethical implications for the chosen data analytic structure.
  - a. **Evaluate** the ethical implications of the data set for the organization. In other words, what fields could potentially be ethically damaging to the organization if used as a part of your model (e.g., “marriage” or “gender” fields)?
  - b. **Recommend a strategy** for addressing the ethical implications. Given the implications that you have identified, how would you highlight the ethical aspects for the organization’s review? Describe how you would address using those fields in light of these ethical implications.
- III. Model Creation
  - a. Evaluate existing data analytic strategies in terms of **their use for data model creation**. How useful would these strategies be within the chosen organizational environment?
  - b. What **value** does your analytic structure and strategy hold for model creation for your organization? Be sure to provide examples and support with resources when appropriate.
  - c. Create a **pilot plan** in which your strategy will be implemented and **test** your strategy using the available data. In other words, run the available data through your architecture to ensure that the process is smooth and the results are as needed.
  - d. Create visual and text-based reports showing pilot results. In other words, **create reports** from the pilot implementation of your strategy.
- IV. **Presentation:** Create a project proposal for the full implementation of your proposed data analytic solution. This executive presentation is your opportunity to convince your executives of the value that can be added by your proposal.
  - a. Extrapolate pilot results to expected full implementation results and estimate reasonable **return on investment for full implementation**. In other words, given the pilot results, how feasible is full implementation and what is the estimated return on investment?
  - b. **Articulate how full implementation** would meet the needs of the organization. Be mindful of your audience (organization executives, in this case), as they are the ultimate decision makers that you need to convince.

## Milestones

### Milestone One: Select Use Case Scenario and Evaluate Ethical Implications

In **Module Two**, you will select a use case scenario. You will submit a three- to four-page summation that includes the potential business value data, analytic structure, the application of the CRISP-DM process, and your proposal for the analytic tool you will use in your project. You will also address the ethical implications identified in your data. **This milestone is graded with the Milestone One Rubric.**

### Milestone Two: Model Creation

In **Module Four**, you will submit a model framework. Report on the data selected, preparation of the data, test design, and the design of the model. Evaluate the role of existing analytic strategies in your model creation and summarize the business value of your model. **This milestone is graded with the Milestone Two Rubric.**

### Milestone Three: Pilot Plan

In **Module Six**, you will submit a pilot plan. Create a pilot plan in which your strategy will be implemented and test your strategy using the available data. In other words, run the available data through your architecture to ensure that the process is smooth and the results are as needed. **This milestone is graded with the Milestone Three Rubric.**

### Milestone Four: Reporting Results

In **Module Eight**, you will submit a pilot results report. Create visual and text-based reports showing pilot results. This report should also present your extrapolation of pilot results to expected full implementation results and estimate reasonable return on investment for full implementation. **This milestone is graded with the Milestone Four Rubric.**

### Final Submission: Data Analytic Solution and Presentation

In **Module Nine**, you will submit a data analytic solution and presentation. It should be a complete, polished artifact containing **all** of the critical elements of the final product. It should reflect the incorporation of feedback gained throughout the course. **This submission is graded using the Final Project Rubric**

## Deliverables

Milestone	Deliverable	Module Due	Grading
One	Select Use Case & Evaluate Ethical Implications	Two	Graded separately; Milestone One Rubric
Two	Model Creation	Four	Graded separately; Milestone Two Rubric
Three	Pilot Plan	Six	Graded separately; Milestone Three Rubric
Four	Reporting Results	Eight	Graded separately; Milestone Four Rubric
	Final Project: Data Analytic Solution and Presentation	Nine	Graded separately; Final Project Rubric

## Final Project Rubric

**Guidelines for Submission:** Your paper must be submitted as a Microsoft Word document with double spacing, 12-point Times New Roman font, and one-inch margins. The submission includes the previous milestones that have been submitted. Your target for the final project is 2-3 additional pages.

Critical Elements	Exemplary (100%)	Proficient (90%)	Needs Improvement (70%)	Not Evident (0%)	Value
<b>Data Source Business Value</b>	Meets "Proficient" criteria and provides relevant examples or in-depth analysis of the data to support the explanation	Logically describes the business value of the available data and data sources for the organization	Describes the business value of the available data and data sources for the organization, but with gaps in logic	Does not describe the business value of the available data and data sources for the organization	6
<b>CRISP-DM Application</b>	Meets "Proficient" criteria and provides relevant examples to support business value provided by the CRISP-DM method	Accurately explains how the phases of the CRISP-DM methodology will enable proper execution of the data solution	Explains how the phases of the CRISP-DM methodology will enable proper execution of the data solution, but the explanation contains errors or omissions	Does not explain how the phases of the CRISP-DM methodology will enable proper execution of the data solution	7
<b>Purpose of Analytic Structure</b>	Meets "Proficient" criteria and provides examples of statistical outcome definitions which support the purpose of the structure	Describes the purpose behind the descriptive and predictive analytic structure and how the selected structure could provide support, benefits, and value for the organization	Describes the purpose behind the descriptive and predictive analytic structure and how the structure could provide support, benefits, and value for the organization, but the response is cursory or contains inaccuracies	Does not describe the purpose behind the descriptive and predictive analytic structure or how the structure could provide support, benefits, and value for the organization	6

Critical Elements	<b>Exemplary (100%)</b>	<b>Proficient (90%)</b>	<b>Needs Improvement (70%)</b>	<b>Not Evident (0%)</b>	<b>Value</b>
<b>Articulation of Tool Selection</b>	Meets "Proficient" criteria and includes a comparison of benefits of the selected tool over other potential options	Logically defends how the selected tool can produce analysis and reporting that could provide support, benefits, and value for the organization	Defends how the selected tool can produce analysis and reporting that could provide support, benefits, and value for the organization, but with gaps in logical application to the organization	Does not defend how the selected tool could provide support, benefits, and value for the organization	6
<b>Additional Data Fields</b>	Meets "Proficient" criteria and makes cogent connections between given data set and the value provided by additional fields	Provides examples of additional data fields that would complement current data set and cites examples for how these fields would add value	Provides examples of additional data fields that would complement current data set but does not cite examples for how these fields would add value	Does not provide examples of additional data fields or cite examples for how these fields would add value	7
<b>Ethical Implication Evaluation</b>	Meets "Proficient" criteria and evaluation is contextualized with specific examples of data fields for review	Accurately evaluates the ethical implications of the data set for the organization	Evaluates the ethical implications of the data set for the organization, but evaluation is not always accurate or evaluation is cursory	Does not evaluate the ethical implications of the data set for the organization	6
<b>Ethical Recommendations</b>	Meets "Proficient" criteria and description of strategy is exceptionally clear and contextualized	Recommends a strategy for highlighting ethical implications and describes how to address those fields responsibly	Recommends a strategy for highlighting ethical implications, but recommendations are cursory or may not successfully address ethical concerns	Does not recommend a strategy for highlighting ethical implications or describe how to address the fields responsibly	6
<b>Model Creation: Applicability</b>	Meets "Proficient" criteria and provides support with relevant resources and examples	Accurately evaluates existing data analytic strategies in terms of their use for data model creation and appropriateness for the organizational environment	Accurately evaluates existing data analytic strategies in terms of their use for data model creation and appropriateness for the organizational environment, but with gaps in accuracy or lack of detail relating the strategies to the organizational environment	Does not evaluate existing data analytic strategies for model creation	8
<b>Model Creation: Value</b>	Meets "Proficient" criteria and defense examples are real-world examples with direct relevance to the organizational context	Defends the value added to the process of model creation within the organization by the proposed data analytic strategy with examples and evidence	Defends the value added to the process of model creation within the organization by the proposed data analytic strategy, but does not qualify the defense with examples and evidence	Does not articulate and defend the value added to the process of model creation within the organization by the proposed data analytic strategy	9

Critical Elements	Exemplary (100%)	Proficient (90%)	Needs Improvement (70%)	Not Evident (0%)	Value
<b>Model Creation: Pilot Plan and Test</b>	Meets "Proficient" criteria and pilot plan is transferable to related alternative proposals	Creates a complete pilot plan that is used in conjunction with available data to test the proposed strategies and structure for effectiveness	Creates a pilot plan that could be used in conjunction with available data to test the proposed structure and strategies, but implementation is not carried through	Does not create a pilot plan that could be used in conjunction with available data to test the proposed structure and strategies	9
<b>Model Creation: Report Creation</b>	Meets "Proficient" criteria and reports are organized and professional in nature	Creates accurate visual and text-based reports from the results of the pilot run with available data	Creates visual and text-based reports from the results of the pilot run with available data, but not all visualizations are accurate	Does not create visual and text-based reports from the results of the pilot run with available data	9
<b>Presentation: Full Implementation Value</b>	Meets "Proficient" criteria including feasibility of full implementation	Logically extrapolates pilot results to expected full implementation results to accurately estimate the return on investment	Extrapolates pilot results to expected full implementation results to estimate the return on investment, but extrapolation is not logical or estimation of return is not accurate	Does not extrapolate pilot results to expected full implementation results to estimate the return on investment	8
<b>Presentation: Full Implementation Articulation</b>	Meets "Proficient" criteria and articulation is clear for audiences with various levels of data analysis knowledge	Clearly and concisely articulates how full implementation would meet the needs of the organization	Articulates how full implementation would meet the needs of the organization, but articulation is not always clear or concise	Does not articulate how full implementation would meet the needs of the organization	8
<b>Articulation of Response</b>	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy-to-read format	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	5
<b>Total</b>					100%