

Southern New Hampshire University
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 multiple sources 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 five 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, Three, Five, 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 security, privacy, and 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 [DAT 650 Use Case Descriptions document](#). The accompanying data sets can be found 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 existing data and the **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, select an **analytic structure** (descriptive, predictive, prescriptive, or some combination). Explain how the structure fits the organization and how it could provide additional support, benefits, and values for the organization as a whole. For example, why could the use of this structure be important for your organization?
 - 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?

- II. Evaluate potential security, privacy, and ethical needs for the data analytic structure chosen.
 - a. **Evaluate** the data source security requirements for the organization and **current architecture**. In other words, where is the organization lacking in terms of security requirements and ethical strategies? What are some of the security and privacy strengths and weaknesses of the current architecture?
 - b. **Recommend a strategy for securing data**. Given the weaknesses you have identified, how would you improve the security and privacy strategies used? How would your new structure address these issues in an ethical manner? What software applications may help to improve the security standards?

- 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.
 - c. Create a **data analytic architecture** pattern with details for full implementation. In other words, create a model or image that represents the overall architecture or structure of the data analytic solution that helps to communicate a plan for implementation.



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Milestones

Milestone One: Select Use Case Scenario

In **Module Two**, you will select a use case scenario. You will submit a two- to three-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. **This milestone is graded with the Milestone One Rubric.**

Milestone Two: Data Security Goals

In **Module Three**, you will submit a security goal summary. You will summarize the potential security, privacy, and ethical needs for the data analytic structure chosen and evaluate the data source security requirements for the organization and current architecture. **This milestone is graded with the Milestone Two Rubric.**

Milestone Three: Model Creation

In **Module Five**, 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 Three Rubric.**

Milestone Four: 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 Four Rubric.**

Milestone Five: 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 Five 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
1	Select Use Case	Two	Graded separately; Milestone One Rubric
2	Data Security Goals	Three	Graded separately; Milestone Two Rubric
3	Model Creation	Five	Graded separately; Milestone Three Rubric
4	Pilot Plan	Six	Graded separately; Milestone Four Rubric
5	Reporting Results	Eight	Graded separately; Milestone Five Rubric
	Final Submission: Data Analytic Solution and Presentation	Nine	Graded separately; Final Project Rubric


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Final Project Rubric

Guidelines for Submission: Your paper must be submitted as a two- to three-page Microsoft Word document with double spacing, 12-point Times New Roman font, and one-inch margins.

Critical Elements	Exemplary (100%)	Proficient (90%)	Needs Improvement (70%)	Not Evident (0%)	Value
Data Source Business Value	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
CRISP-DM Application	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
Analytic Structure Selection	Meets “Proficient” criteria and provides relevant examples to support the defense of the structure	Logically defends how the selected structure could provide support, benefits, and value for the organization	Defends how the selected structure could provide support, benefits, and value for the organization, but with gaps in logical application to the organization	Does not defend how the selected structure could provide support, benefits, and value for the organization	6
Articulation of Tool Selection	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
Additional Data Sources	Meets “Proficient” criteria and explanation of added value is qualified with relevant, real-world examples	Accurately explains how additional internal or external data sources may add further value to the organization as supported by evidence	Explains how additional internal or external data sources may add further value to the organization, but explanation is not accurate or not supported	Does not explain how additional internal or external data sources may add further value to the organization	7

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Current Architecture Evaluation	Meets “Proficient” criteria and evaluation is contextualized with specific examples of threats that could result from the weaknesses	Accurately evaluates the current architecture and strategies in terms of security, privacy, and ethical strengths and weaknesses	Evaluates the current architecture and strategies in terms of security, privacy, and ethical strengths and weaknesses, but evaluation is not always accurate	Does not evaluate the current architecture and strategies in terms of security, privacy, and ethical strengths and weaknesses	7
Security Recommendations	Meets “Proficient” criteria and recommendation is supported with scholarly, relevant resources	Recommends a strategy and software applications that have the potential to successfully address security, privacy, and ethical concerns	Recommends a strategy and software applications, but recommendations may not have the potential to successfully address security, privacy, and ethical concerns	Does not recommend a strategy and software applications for addressing security, privacy, and ethical concerns	6
Model Creation: Applicability	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	6
Model Creation: Value	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
Model Creation: Pilot Plan and Test	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	7

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Model Creation: Report Creation	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
Presentation: Full Implementation Value	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	6
Presentation: Full Implementation Articulation	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	6
Presentation: Data Analytic Architecture Model	Meets “Proficient” criteria and model presentation is mindful of the audience or particularly well formed	Creates an accurate model of the overall architecture proposal for the organization that helps to communicate the needs for overall implementation	Creates a model of the overall architecture proposal for the organization, but the model does not always help to communicate the needs for overall implementation	Does not create a model of the overall architecture proposal for the organization	7
Articulation of Response	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
Earned Total					100%