

QUM2 – QUM2 TASK 2: DECISION TREE ANALYSIS

DATA-DRIVEN DECISION MAKING – C207

PRFA – QUM2

TASK OVERVIEW SUBMISSIONS EVALUATION REPORT

COMPETENCIES

3009.1.1 : The Case for Quantitative Analysis

The graduate uses decision-making methods to develop strategies for organizational decision processes.

3009.1.2 : Statistics as a Managerial Tool

The graduate uses a variety of decision-analysis tools to evaluate alternatives during the decision-making processes.

3009.1.3 : More Statistical Tools

The graduate uses quantitative techniques and statistical tools to identify the most appropriate decision alternatives.

3009.1.4 : Quality Metrics and Tools

The graduate analyzes how work is accomplished and applies quality metrics and tools to increase efficiency, effectiveness, and quality.

3009.1.5 : Real World Data-Driven Decisions

The graduate analyzes data from business intelligence and knowledge-management systems to make appropriate decisions.

3009.1.6 : Improving Organization Performance

The graduate uses appropriate data to improve organizational performance.

INTRODUCTION

Managers are required to organize, interpret, and display data that is relevant to the real-world business decisions they must make in their businesses. Business decisions must be based on relevant and reliable data. The use of analytical tools will improve your ability to use data to make informed decisions.

In this task, you will address the business situation in the attached scenario. You will access the scenario and data set by entering your student ID number in the “Start” tab of the “Decision Tree Resources” attachment. The scenario and data set are located in the “Decision Tree Scenario” tab. Using this data set, you will perform a decision tree analysis and recommend a solution. This recommendation will be included in a report that you will write, summarizing the key details of your analysis.

For full functionality of the scenario and data attachment, you are strongly encouraged to use Microsoft Excel, which is available via the Microsoft Office 365 subscription service provided to all WGU students. It can be

downloaded using the "Microsoft Office 365" link in the weblinks section.

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SCENARIO

Refer to the scenario located in the attached "Decision Tree Analysis Resources."

REQUIREMENTS

Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. The originality report that is provided when you submit your task can be used as a guide.

You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

Tasks may **not** be submitted as cloud links, such as links to Google Docs, Google Slides, OneDrive, etc., unless specified in the task requirements. All other submissions must be file types that are uploaded and submitted as attachments (e.g., .docx, .pdf, .ppt).

Complete your decision tree analysis and create a report (suggested length of 2–4 pages or 800 words) by doing the following:

Note: You are encouraged to use the template located within the attached "Decision Tree Analysis Resources" to complete your analysis. While it is required that you use the scenario and data set located in the attachment, the use of the data analysis template is optional.

A. Describe a business question that could be answered by applying decision tree analysis and is derived from the scenario in the attached "Decision Tree Analysis Resources."

B. Identify the relevant data values required for your decision tree analysis, including the following:

- probabilities
- payoffs
- profits
- demand

C. Report how you analyzed the data using decision tree analysis by doing the following:

1. Complete a decision tree diagram, including each of the following:
 - state-of-nature nodes
 - calculated payoffs, each expressed out to two decimal places
 - expected values, each expressed out to two decimal places

Note: You can submit the completed decision tree diagram using a separate attachment or the optional template on the attached "Decision Tree Analysis Resources."

Note: Refer to “[Prepare for the Performance Assessment Task 2](#)” in the course of study to see examples of acceptable output.

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2. Justify why decision tree analysis is the appropriate analysis technique, including relevant details from the scenario to support your justification.

D. Summarize the implications of your decision tree analysis by doing the following:

1. Explain the role of probabilities and the role of demand for each branch.
2. Explain how the expected value of each node is determined based on payoffs.

Note: Refer “[Prepare for the Performance Assessment Task 2](#)” in the course of study to see an example of an acceptable discussion of results.

3. Discuss **one** limitation of each of the following:

- the data elements
- the decision tree analysis

E. Recommend a course of action that addresses the business question from part A and is based on the results of your decision tree analysis.

F. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

G. Demonstrate professional communication in the content and presentation of your submission.

File Restrictions

File name may contain only letters, numbers, spaces, and these symbols: ! _ . * ' ()

File size limit: 200 MB

File types allowed: doc, docx, rtf, xls, xlsx, ppt, pptx, odt, pdf, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z

RUBRIC

A: BUSINESS PROBLEM DESCRIPTION

NOT EVIDENT

A description of the business question is not provided.

B: RELEVANT DATA

NOT EVIDENT

Data values are not provided.

APPROACHING COMPETENCE

The business question described is not relevant to the scenario, is not accurate, or is not appropriate for decision tree analysis.

The business question is accurately described, is relevant to the scenario, and is appropriate for decision tree analysis.

**APPROACHING
COMPETENCE**

The data values provided are not accurate or not relevant for

COMPETENT

COMPETENT

The relevant data values are accurately identified for the deci-

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C1:DECISION TREE DIAGRAM

NOT EVIDENT

A decision tree diagram is not provided.

D2:EXPECTED VALUES

NOT EVIDENT

An explanation of how the expected value is determined for each node is not provided. the decision tree analysis, or 1 or more of the given elements are not included.

**APPROACHING
COMPETENCE**

The explanation does not logically address both the role of probabilities and the role of demand for 1 or more of the branches of the decision tree analysis.

C2:ANALYSIS TECHNIQUE JUSTIFICATION

NOT EVIDENT

A justification of decision tree analysis is not provided.

**APPROACHING
COMPETENCE**

The decision tree diagram provided does not contain 1 or more of the given elements, or the decision tree diagram contains 1 or more inaccuracies.

**APPROACHING
COMPETENCE**

The explanation does not logically and accurately address 1 or more steps required to determine decision tree analysis, including each of the given elements.

D1:PROBABILITIES AND DEMAND

NOT EVIDENT

An explanation of the role of probabilities and demand is not provided.

**APPROACHING
COMPETENCE**

The justification of decision tree analysis does not logically explain why it is the appropriate analysis technique, or the justification is not supported with relevant details from the scenario.

COMPETENT

The decision tree diagram accurately includes each of the given elements.

COMPETENT

The justification of decision tree analysis logically explains why it is the appropriate analysis technique and is supported with relevant details from the scenario.

COMPETENT

The explanation logically addresses both the role of probabilities and the role of demand for each branch of the decision tree analysis.

COMPETENT

The explanation logically and accurately addresses each step required to determine the expected value of each node based on payoffs.

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summarized.

tion is not logically supported by the results of the decision tree analysis or does not appropriately address the business question from part A.

D3:LIMITATIONS

NOT EVIDENT

A discussion of 1 limitation of the data elements and 1 limitation of the decision tree analysis is not provided.

G:PROFESSIONAL COMMUNICATION

NOT EVIDENT

Content is unstructured, is disjointed, or contains pervasive errors in mechanics, usage, or grammar. Vocabulary or tone is unprofessional or distracts from the topic.

mine the value of 1 or more nodes based on payoffs.

APPROACHING COMPETENCE

The submission includes in-text citations for sources that are quoted, paraphrased, or summarized and a reference list; however, the citations or reference list is incomplete or inaccurate.

E:RECOMMEND COURSE OF ACTION

NOT EVIDENT

A recommended course of action is not provided.

APPROACHING COMPETENCE

The discussion addresses 1 limitation of the data elements and 1 limitation of the decision tree analysis, but 1 or both of the limitations provided are not logical.

APPROACHING COMPETENCE

Content is poorly organized, is difficult to follow, or contains errors in mechanics, usage, or grammar that cause confusion.

F:SOURCES

NOT EVIDENT

The submission does not include both in-text citations and a reference list for sources that are quoted, paraphrased, or

APPROACHING COMPETENCE

The recommended course of ac

COMPETENT

The discussion logically addresses 1 limitation of the data elements and 1 limitation of the decision tree analysis.

COMPETENT

The recommended course of action is logically supported by the results of the decision tree analysis and appropriately addresses the business question from part A.

COMPETENT

The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

COMPETENT

Content reflects attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively

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and understanding.

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Terminology is misused or ineffective.

conveys the intended meaning.

Mechanics, usage, and grammar promote accurate interpretation

WEB LINKS

SUPPORTING DOCUMENTS

[Decision Tree Analysis Resources.xlsx](#)

