TASK 2
COMPETENCIES

981.1.1 : **Capstone**
The graduate integrates and synthesizes competencies from across the degree program and thereby demonstrates the ability to participate in and contribute value to the chosen professional field.

INTRODUCTION

Before starting this task, ensure that task 1 has been approved by a course mentor. If task 1 has not been approved, your task 2 submission will be returned without evaluation.

In this task, you will address the real-world research question you identified in task 1. You will gather relevant data, analyze the data, and recommend a solution. This recommendation will be included in a report that you will write, summarizing the key details of your analysis.

Your competency as it relates to the program outcomes will be demonstrated through the completion of this capstone. The program competencies required for this degree program are as follows:

1. The graduate implements a plan for solving a organizational problem managing a diverse tools, resources, and stakeholders.
2. The graduate evaluates phenomena represented in data sets for forecasting trends and solving problems.
3. The graduate utilizes industry-standard tools for manipulating and representing data.
4. The graduate communicates information and data trends using data storytelling and visualization techniques.
5. The graduate applies industry standards and best practices in data mining and machine learning to an organizational decision-making process.

Note: You must successfully pass task 1 before you begin working on task 2. However, in practice, your topic, data scope, and research question may change based on your findings as you complete your research. Your work on task 2 may lead you to recognize that more data is needed and that it must be approved data. For this reason, you may need to update your task 1 forms before task 2 is complete.

Note: Any information that would be considered confidential, proprietary, or personal in nature should not be included in the actual task submission to WGU. Do not include the actual names of people, suppliers, or companies, or other identifiable information. Fictional names should be used where necessary. Company-specific data, including financial information, should not be included but should be addressed in a general fashion as appropriate.

REQUIREMENTS

Create a report by doing the following:

Research Question

A. Summarize the original real-data research question you identified in task 1. Your summary should include justification for the research question you identified in task 1, a description of the context in which the research question exists, and a discussion of your hypothesis.

Data Collection

B. Report on your data-collection process by describing the relevant data you collected, discussing one advantage and one disadvantage of the data-gathering methodology you used, and discussing how you overcame any challenges you encountered during the process of collecting your data.

Data Extraction and Preparation

C. Describe your data-extraction and -preparation process and provide screenshots to illustrate *each* step. Explain the tools and techniques you used for data extraction and data preparation, including how these tools and techniques were used on the data. Justify why you used these particular tools and techniques, including one advantage and one disadvantage when they are used with your data-extraction and -preparation methods.

Analysis

D. Report on your data-analysis process by describing the analysis technique(s) you used to appropriately analyze the data. Include the calculations you performed and their outputs. Justify how you selected the analysis technique(s) you used, including one advantage and one disadvantage of these technique(s).

Data Summary and Implications

E. Summarize the implications of your data analysis by discussing the results of your data analysis in the context of the research question, including one limitation of your analysis. Within the context of your research question, recommend a course of action based on your results. Then propose **two** directions or approaches for future study of the data set.

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

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

TASK 3
COMPETENCIES

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The graduate integrates and synthesizes competencies from across the degree program and thereby demonstrates the ability to participate in and contribute value to the chosen professional field.

INTRODUCTION

In the professional field, you will often be asked to present complex data and findings to your data analytics peers as well as to people who have little or no experience with data mining and analytics. You will need to demonstrate effective communication skills to present your findings to different audiences.

For this task, you will create an executive summary of your findings from task 2 and then use Panopto to record yourself delivering a presentation of that summary. Your presentation will also include slides displayed by a multimedia tool (e.g., PowerPoint, Keynote, Prezi). This presentation will reiterate, in laymen's terms, your findings from task 2.

Note: The audiovisual recording should feature you visibly presenting the material (i.e., not in voiceover or embedded video) and should simultaneously capture both you and your multimedia presentation.

Note: For instructions on how to access and use Panopto, use the "Panopto How-To Videos" web link provided below. To access Panopto's website, navigate to the web link titled "Panopto Access", and then choose to log in using the "WGU" option. If prompted, log in using your WGU student portal credentials, and then it will forward you to Panopto's website.

To submit your recording, upload it to the Panopto drop box titled "MSDA Capstone– D214 | NKM2." Once the recording has been uploaded and processed in Panopto's system, retrieve the URL of the recording from Panopto and copy and paste it into the Links option. Upload the remaining task requirements using the Attachments option.

Before starting this task, ensure that task 1 and task 2 have a passing score. If task 1 or task 2 has not yet passed, your task 3 submission will be returned without evaluation.

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).*

Executive Summary and Implications

A. Develop an executive summary using your data and results from task 2. The summary should be written for a *technical audience* of your data-analytics peers or members of your team and should include *each* of the following:
   - a statement of the problem and the hypothesis
   - a summary of the data-analysis process
   - an outline of the findings
   - an explanation of the limitations of the techniques and tools used
   - a summary of proposed actions
   - expected benefits of the study (be as specific and quantitative as possible)

Presentation of Findings

B. Present your Capstone project to a *non-technical audience*. Use Panopto to record yourself delivering a presentation that includes slides displayed by a multimedia tool (e.g., PowerPoint, Keynote, Prezi). Your recording should capture your multimedia presentation. Your presentation should also demonstrate appropriate communication skills for the audience.
   1. Cover in your presentation *each* of the following points:
      - a brief introduction of yourself and your background
      - a statement of the problem and the hypothesis
      - a summary of the data-analysis process
      - an outline of the findings
      - an explanation of the limitations of the techniques and tools used
      - a summary of proposed actions
      - expected benefits of the study (be as specific and quantitative as possible)

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

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