QKN1 — QKN1 TASK 1: PROGRAM PLANNING

ANALYTICS PROGRAMMING — D598
PRFA — QKN1

COMPETENCIES

4158.1.1 : Documents Programming Task Component Parts
The learner documents the required component parts of a complex programming task.

INTRODUCTION

In this task you will demonstrate algorithmic thinking by creating a flowchart and pseudocode for a program that performs data analysis.

SCENARIO

You have been hired by a small investment company that manages an equity fund comprised of 150 U.S. companies across multiple industries. The fund managers are looking to rebalance the fund's holdings and would like you to provide an analysis of the companies' performance based on data from the most recent quarter. The data can be found in the supporting documents section as "D598 Data Set".

To aid in your analysis you must write programs in Python or R to perform the following tasks:

- Import the data file into a data frame.
- Identify any duplicate rows in the data set.
- Group all IDs by state, then run descriptive statistics (mean, median, min, & max) for all numeric variables by state and store this result as a new data frame. (Code should be modified from "D598 Task 2 Original Code" in the supporting documents section)
- Filter the data frame to identify all businesses with debt-to-equity ratios that are negative.
- Create a new data frame that provides the debt-to-income ratio for every business in the data set. Debt-to-income ratio is defined as long-term debt divided by revenue.
- Concatenate the debt-to-income ratio data frame you created with the original data frame.

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 similarity 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).*

In this task you will prepare for your program writing by doing the following:

A. Create a flowchart for a program to perform the required task.

B. Write pseudocode for a program to perform the required task.

C. Provide an explanation of the relationship between the flowchart and pseudocode that does the following:
   1. Describe the logic behind the flowchart and pseudocode.
   2. Explain the alignment between flowchart and pseudocode.

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

E. 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, csv, 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:FLOWCHART

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A flowchart is not provided.	A flowchart is provided but is in-appropriate for the required task or contains errors.	A flowchart is provided that is appropriate for the required task and is free of errors.

B:PSEUDOCODE

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
Pseudocode is not provided.		Pseudocode is provided that is appropriate for the required task

	Pseudocode is provided but is inappropriate for the required task or contains errors.	and is free of errors.

C1:FLOWCHART EXPLANATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A description of the logic behind the flowchart and pseudocode is not provided.	The response does not describe the logic behind the flowchart and the pseudocode or contains errors.	The response describes the logic behind the flowchart and the pseudocode and is free of errors.

C2:PSEUDOCODE EXPLANATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
An explanation of the alignment between the flowchart and the pseudocode is not provided.	The response does not explain the alignment between the flowchart and pseudocode or contains errors.	The response explains the alignment between the flowchart and pseudocode and is free of errors.

D:APA SOURCES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not include in-text citations and references according to APA style for content that is quoted, paraphrased, or summarized.	The submission includes in-text citations and references for content that is quoted, paraphrased, or summarized but does not demonstrate a consistent application of APA style.	The submission includes in-text citations and references for content that is quoted, paraphrased, or summarized and demonstrates a consistent application of APA style.

E:PROFESSIONAL COMMUNICATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
Content is unstructured, is disjointed, or contains pervasive errors in mechanics, usage, or grammar. Vocabulary or tone is unprofessional or distracts from the topic.	Content is poorly organized, is difficult to follow, or contains errors in mechanics, usage, or grammar that cause confusion. Terminology is misused or ineffective.	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 conveys the intended meaning.

Mechanics, usage, and grammar promote accurate interpretation and understanding.

SUPPORTING DOCUMENTS

D598 Data Set.xlsx