

Task 1:

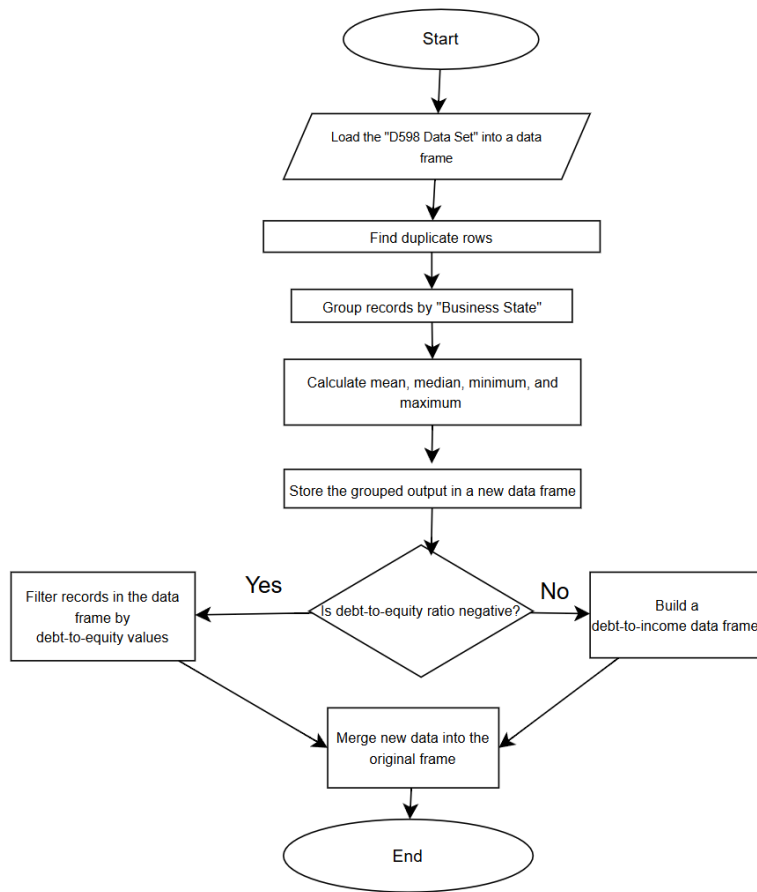
Program Planning

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Analytics Programming — D598

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A: Flowchart



B: Pseudocode

1. Start
2. Load the "D598 Data Set" into a data frame
3. Find duplicate rows
4. Group records by "Business State"
5. Calculate mean, median, minimum, and maximum for the following columns:
 - Total Long-term Debt
 - Total Equity
 - Debt to Equity

- Total Liabilities
 - Total Revenue
 - Profit Margin
6. Store output in a new data frame
 7. Check if the debt-to-equity ratio is negative
 - If Yes: Filter records in the data frame by debt-to-equity values
 - If No: Build a debt-to-income data frame
 8. Merge the new data into the original data frame
 9. End

C1: FLOWCHART EXPLANATION and C2: PSEUDOCODE EXPLANATION

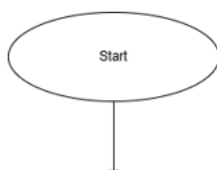
The flowchart and pseudocode are closely connected, as both outline the same step-by-step process for analyzing business financial data. The flowchart uses simplified language and symbols for clarity and quick reference, while the pseudocode provides a more detailed and structured list of the actions performed in the program. Each step in the pseudocode is represented in the flowchart in the same order, including one conditional decision point.

The program includes a decision-making step where it checks whether a company's debt-to-equity ratio is negative. If the ratio is negative, the program filters those records for further analysis. If the ratio is not negative, it proceeds to build a debt-to-income data frame instead. This conditional logic is represented in the flowchart by a diamond-shaped decision symbol and reflected in the pseudocode with a conditional check. The rest of the program continues in a linear sequence, with both paths merging before the final step.

Below, I have listed each pseudocode step and how it matches the corresponding step in the flowchart.

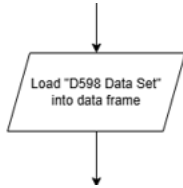
Pseudocode Step 1: "Start"

Matching Flowchart Step:



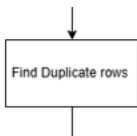
Pseudocode Step 2: “Load the "D598 Data Set" into a data frame”

Matching Flowchart Step:



Pseudocode Step 3: “Find duplicate rows”

Matching Flowchart Step:



Pseudocode Step 4: “Group records by "Business State"”

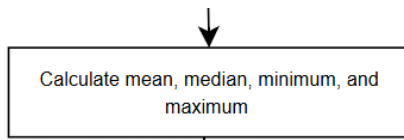
Matching Flowchart Step:



Pseudocode Step 5: “Calculate mean, median, minimum, and maximum for the following columns:

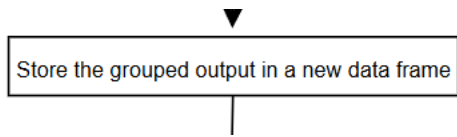
- Total Long-term Debt
- Total Equity
- Debt to Equity
- Total Liabilities
- Total Revenue
- Profit Margin”

Matching Flowchart Step:



Pseudocode Step 6: “Store output in a new data frame”

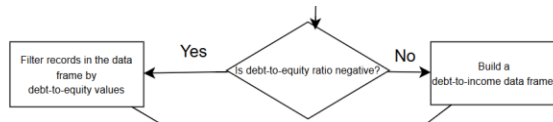
Matching Flowchart Step:



Pseudocode Step 7: “Check if the debt-to-equity ratio is negative”

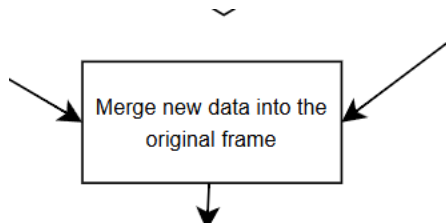
- If Yes: Filter records in the data frame by debt-to-equity values
- If No: Build a debt-to-income data frame

Matching Flowchart Step:



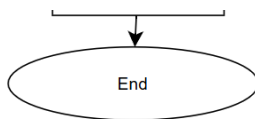
Pseudocode Step 8: “Merge the new data into the original data frame”

Matching Flowchart Step:



Pseudocode Step 9: “End”

Matching Flowchart Step:



References

No outside sources were used in the creation of this submission. All information was based on WGU course materials and provided resources.