

ANL203
Analytics for Decision-Making

Tutor-Marked Assignment

January 2023 Presentation

TUTOR-MARKED ASSIGNMENT (TMA)

This assignment is worth 18% of the final mark for ANL203 Analytics for Decision-Making.

The cut-off date for this assignment is 16 February 2023, 2355hrs.

Up to 25 marks of penalties will be imposed for inappropriate or poor paraphrasing. For serious cases, they will be investigated by the examination department. More information on effective paraphrasing strategies can be found on <https://academicguides.waldenu.edu/writingcenter/evidence/paraphrase/effective>.

If your course involves programming, you are urged to read the following articles as well:

https://wiki.cs.astate.edu/index.php/Plagiarism_in_a_Programming_Context

<https://www.turnitin.com/blog/plagiarism-and-programming-how-to-code-without-plagiarizing-2>

Note to Students:

You are to include the following particulars in your submission: Course Code, Title of the TMA, SUSS PI No., Your Name, and Submission Date.

Question 1

You are to analyse a dataset *Retail_TMA.xlsx* to answer the following questions. In the real world of data analysis, when you are not querying the database directly and data is provided to you, it is essential to evaluate the data and ask pertinent questions about the data quality. It enables us to confirm the validity of any insights drawn from the data. The provided dataset contains transaction records from an online retailer. Each record represents a transaction involving a unique product (Product Code) and a specific customer (Customer ID) on a certain day (Receipt Date). The Quantity displays the total number of units sold, and the Price displays the Product Code unit price. There may be more than one Product Code in a Receipt. Location is a representation of the customer's country, and Description is a description of the product. Download the dataset “*Retail_TMA.xlsx*” from Canvas and answer the following questions. You may use any software tool (such as Excel, PowerBI, etc.) to produce the chart(s) and table(s).

- (a) Identify **one (1)** business question statement that can be answered by analysing the dataset *Retail_TMA.xlsx*. Your description should clearly explain what data fields are relevant and how the data fields can be used to answer the business question. (Up to 150 words for part (a))
(15 marks)
- (b) Create a summary of the dataset *Retail_TMA.xlsx* in tabular format. You should identify each data field's type (nominal, ordinal, interval, or ratio), examine individual variables, and calculate summary measures when applicable. (Up to 200 words for part (b))
(15 marks)

- (c) Prepare the dataset *Retail_TMA.xlsx* in a form suitable for analysis by fixing the data issues and errors with explanation and justification of necessary data transformations. Illustrate any necessary data preparation with example screenshot(s). (Up to 200 words for part (c))
(28 marks)
- (d) Employ **two (2)** graphical charts and **one (1)** pivot table to present the key features of the data variables or to explore the relationship among the variables in the dataset *Restaurant_Grades.xlsx*. You may use any software tool (such as Excel, PowerBI, etc.) to produce the proposed graphical charts and the pivot table. Provide a screenshot of each produced chart/pivot table. Use up to 250 words to explain how the charts and the pivot table are created and discuss why the charts and the pivot table are recommended.
(22 marks)

The word limit does not apply to visuals or screenshots of data preparation example(s), in-text citations, charts, and pivot tables. Do not put your answers into Appendix. **20 marks will be allocated to the professional presentation and writing of your TMA report**; e.g., covering the following aspects,

- Organisation
- Communication of ideas
- Citation and reference
- Grammar

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