ITECH1103- Big Data and Analytics Group Assignment – Semester 2, 2020

Weight – 25%

Due Date: Analytic Report -Due Week 11 Sunday 11:55pm

Analytic Report: Learning Outcomes Assessed: A3, K3, K6, and S2:

Purpose: The purpose of this task is to provide students with practical experience in working in teams to write a data analytical report to provide useful insights, pattern and trends in the **RETAILDEMO_2** dataset in the light of guided questions asked on page 4 of this document. This dataset is located in SAS Viya archives of datasets. This activity will give students the opportunity to show innovation and creativity in applying SAS Analytics, and designing useful visualization and predictive solutions for various analytics problems.

Project Details:

This is a group assignment and you will complete the task with your team. Your team will be made up of at most 3 members who are all enrolled in the same laboratory – the teams will be allocated by your tutor. It is expected that each team member will contribute equally to the project.

Your team will use an analytical tool (i.e SAS Visual Analytics) to explore, analyze and visualize the dataset provided. You will receive feedback on the draft about presentation choices, content, analysis, and style.

The aim is to use the data set allocated to provide interesting insights, trends and patterns amongst the data. Your intended audience is the CEO and middle management of the Multinational Retail Company, who are responsible for overseeing the retails industry worldwide.

In addition, each individual team member will write a short reflection as part of the report on their individual experience on working on the project.

Tasks

- **Task 1- Background information** - Write a description of the dataset and project, and its importance for the organization. Discuss the main benefits of using visual analytics to explore big data. In this you should include a justification for using the visualizations that you will use and how they have been successful in other similar projects. This discussion should be suitable for a general audience. Information must come from at least 6 appropriate sources (2 per student) be appropriately referenced. [2 to 3 pages]

- **Task 2 – Reporting / Dashboards** - For your project, perform the relevant <u>data analysis tasks by answering the guided questions provided (see Appendix for questions and dataset)</u> and, identify the visualization you need to develop.
  Note: remove any missing data points from your visualizations where possible/suitable

- **Task 3 – Additional Visualizations** - In addition to the guided questions, it is expected that **each** student will provide at least two other visualizations of the data (i.e. for a group of 3 students this is 6 extra visualizations). These additional visualizations will be judged in terms of quality of the findings and complexity of analysis.

- These visualizations should be using multi-dimensional, filtering and advance calculation techniques.

- **Task 4 – Justification** -Justify why these visualizations are chosen in Task 2 and 3. Note: To ensure that you discuss this task properly, you must include visual samples of the reports you produce (i.e. the screenshots of the BI report/dashboard must be presented and explained in the written report; use 'Snipping tool'), and also include any assumptions that you may have made about the analysis in your Task 2 (i.e. the report to the operational team of the company).[1 to 2 pages]

- **Task 5 – Discussion of findings** – using the visualizations created discuss the findings from the data set. In this discussion you should explain what each visualization shows. Then summarize the main findings. [3 to 4 pages]

- **Task 6 – Executive Summary** – summary of the data analysis including a brief introduction, methods used and

a list of the key findings [1 page only]

- **Task 7 - The Reflection (Individual Task) -** each team member is expected to write a brief reflection about this project in terms of challenges, learning and contribution. [1 to 2 pages]

Report Submission:

Each member of the group is to submit an electronic copy of the completed group assignment and their own individual reflection via Moodle.

The report will be approximately 8 to 12 pages in length (not counting cover page and references). The report will include the following in the order provided below:

- A cover page including the names and student id of all team members
- Table of Contents
- Table of Figures / Tables
- Executive Summary
- Background
- The body of the report including reports, insights, justifications and visuals
- Discussion of findings
- Conclusion
- References
- Appendices

All references used in your report must be from peer-reviewed sources. Include any and all sources of information including any person(s)n you interviewed for this project.

Your report should be formatted according to the *"Assignment Layout and Appearance Guidelines"* and your references presented using the *APA* referencing style; information is available:

https://federation.edu.au/library/student-resources/help-with-study-skills2/guides-to-your-assessments

You are reminded to read the "Plagiarism" section of the course description.

A passing grade will be awarded to assignments adequately addressing all assessment criteria. Higher grades require better quality and more effort. For example, a minimum is set on the wider reading required. A student reading vastly more than this minimum will be better prepared to discuss the issues in depth and consequently their report is likely to be of a higher quality. So before submitting, please read through the assessment criteria very carefully.

ITECH1103- Big Data and Analytics - Assignment 2- Data Analysis-
Report Marking Guide

Tasks	Marks	Awarded	Comments
1 – Background of the Project: Description of Project, Datasets and organisation. The importance of project for the organisation. Benefits and examples provided for the use of data visualisation using peer reviewed sources.	10		
2 - Dashboard/Reports utilisation of appropriate data analysis tools, visualizations and dashboards developed for the report	30		
3 - Additional Visualizations The quality and complexity of additional visualisations provided other than the guided questions.	10		
4 - Justification - Each analysis/dashboard and report explanation with relevant research papers, complexity and in-depth of the justification.	5		
5 – Discussion of findings - Key data insights, recommendations to achieve organisational objectives with theoretical justifications with proper references.	15		
6- Executive summary - Format, key findings and recommendation	10		
7 – The Reflection (Individual Task)	10		
Presentation of Report - Report is well-written and presented professionally, containing all requirements	10		
Total Marks	**100**		
Total Marks out of 25	**25%**		

Appendix 1: Data Set 1 and Guided Questions

Data Set 1

- Teradata – SAS Viya Data Source – **RETAILDEMO_2 (57 COLUMNS, 2.3 M ROWS & 1.4 HB SIZE)**

Develop a visualization using SAS Viya for each of the following questions.

Guided Questions

1. GROUP TASK: Create a data dictionary for the data source for use by the group.
2. How much is marketing and marketing budget allocated to each industry ?
3. What are the top and bottom 5 cities with respect to number of customers?
4. What is the distribution of customers by department in each country?
5. What is the distribution of customers by group chain in each country? Add animation of the Date
6. What is the trend of transactions over months for each brand?
7. For each store chain, which is most and least popular class?
8. What are the top and bottom 10 products ID in terms of Sales?
9. What are top and bottom 5 classes with respect to number of transactions?
10. What is the popular brand with respect to frequency each department in different countries?
11. What are the top 5 cities with respect to transactions and different time of the day and store chain?
12. What are the top 10 classes with respect to frequency for 4 different promotions and each brand name?
13. What is the trend of transactions across months for all countries? Add animation of the Date
14. What is the annual total sales store chain across countries in different months?
15. Create a geomap countries and transactions.
16. Create a cluster analysis on transaction related data.
17. What are the most appropriate predictors of location of sales? Hint- use decision tree
18. How promotion ID is varied across different age brackets in different countries?
19. What is the trend of sales from 01/01/2010 to02/01/2010 with respect to countries Hint- You need to use filter for the dates -? Add animation of the Date
20. What is the most and least popular day in terms of Sales for any county? Please mention the name of the country

ITECH1103- Big Data and Analytics Group Presentation – Semester 2, 2020

Weight – 10%

Due Date: Online Video Presentation Via MS teams – Week 10 Sunday 11:55pm

Group Video Presentation: Learning Outcomes Assessed: K4, A1, A2, V1, V2
Purpose: The purpose of the oral presentation is to provide an opportunity for students to present the results of data analysis and to share this knowledge while practicing their verbal communication skills

Project Details:

All members of the team are to work together to present their findings and recommendations developed whilst completing the analysis of the data. The presentation should include a visual component, such as Power Point, to support the delivery of their findings.

Requirements

- Video Presentations are to be between 10 to12 minutes in length
- Each team member must present for at least three minutes to verbally present some of the findings from the report
- Teams must provide one visual component (e.g. Power Point) that is consistent in presentation, fonts and format
- Any references used in your presentation must be included at the end of the presentation in APA format (see below).
- The presentation must include:
    - An introduction of the topic and team members
    - The findings made from the analysis of the data including images to support these findings
    - The recommendations you will make in your report
    - A conclusion

Submission and Marking

- Each group member is expected to submit a link of recorded vide presentation
- All references are to be provided using the APA format; information for this is available here:
    - https://federation.edu.au/library/student-resources/help-with-study-skills2/guides-to-your- assessments
- You will be marked according to the marking rubric provided in this document. Those items with a * will be a group mark (i.e. all member of the group who are present will get the same mark), whilst the remaining will be individual marks.

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Presentation Marking Rubric

	Full marks	¾ marks	½ marks	¼ Marks	Mark
Presentation Material [2 marks]	There are no errors in spelling, grammar and punctuation. Information is clear and concise on each slide. Visually appealing/engaging.	There are some errors in spelling, grammar and punctuation. Too much information on two or more slides. Significant visual appeal.	There are many errors in spelling, grammar and punctuation. Too much information was contained on many slides. Minimal effort made to make slides appealing or too much going on.	There are many errors in spelling, grammar and punctuation. The slides were difficult to read and too much information had been copied onto them. No visual appeal.	
Knowledge of topic [7 marks]	Extensive knowledge of topic. Members showed complete understanding of assignment. Accurately answered all questions posed.	Most showed a good understanding of topic. All members able to answer most of audience questions.	Few members showed good understanding of some parts of topic. Only some members accurately answered questions.	Presenters didn't understand topic. Majority of questions answered by only one member or majority of information incorrect.	
Presentation Skills [7 marks]	Regular/constant eye contact, The audience was engaged, and presenters held the audience's attention. Appropriate speaking volume & body language.	Most members spoke to majority of audience; steady eye contact. The audience was engaged by the presentation. Majority of presenters spoke at a suitable volume. Some fidgeting by member(s).	Members focused on only part of audience. Sporadic eye contact by more than one presenter. The audience was distracted. Speakers could be heard by only half of the audience. Body language was distracting.	Minimal eye contact by more than one member focusing on small part of audience. The audience was not engaged. Majority of presenters spoke too quickly or quietly making it difficult to understand. Inappropriate/disinterested body language.	
Content [2 marks]	The presentation was a concise summary of the topic with all questions answered. Comprehensive and complete coverage of information.	The presentation was a good summary of the topic. Most important information covered; little irrelevant info.	The presentation was informative, but several elements went unanswered. Much of the information irrelevant; coverage of some of major points.	The presentation was a brief look at the topic, but many questions were left unanswered. Majority of information irrelevant and significant points left out.	
Group marks [2 marks]	All presenters knew the information, participated equally, and helped each other as needed. Extremely prepared and rehearsed.	Slight domination of one presenter. Members helped each other. Very well prepared.	Significant controlling by some members with one minimally contributing. Primarily prepared but with some dependence on just reading off slides.	Unbalanced presentation or tension resulting from over-helping. Multiple group members not participating. Evident lack of preparation/rehearsal. Dependence on slides.	
	Total				/20
					/10

General Comments/Feedback: