School of Computing, Electrical, and Applied Technology
COMP8811
Data Analytics and Intelligence

Assignment 1

Objective:

Students explore a specific topic or issue related to advanced Data Analytics including learning methods, data processing techniques, feature selection methods and Data Analytics applications among others.

- Group Assignment
- Total Mark: 100, Total Weighting: 40%
- Due Date: 13 April 2024
- Deadline Time: 11:59 pm

Background:

Decision support is an important area in information technology and is essential for making decisions in dynamic and ever-changing business environments. Data Analytics and Intelligence is a branch of computer science that aims to enable machines to make adaptive and intelligent decisions.

In this assignment, you are required to prepare a focused technical report to underpin the basic approach of various data analytics and business intelligence technologies suitable for adaptive decision support in different industries.

Step 1	Decide about your groups of 2-3 members 😊
Step 2	Identify a business problem that is interesting and complex enough so that it requires advanced data analytics and business intelligence solution. Use business requirements analysis and dimensional modelling.
Step 3	Review existing data analytics and intelligence technologies related to the above defined business problem and highlight at least one selected technology. The suitable topics to be discussed in this report may include Regression analysis, Timeseries, Predictive Modelling, Expert systems, Data clustering, Data classification, Association rules learner, Deep Neural Network, or other relevant topics. It is recommended to use "Ebsco computing databases" to find academic publications.
Step 4	Assess the practical value of the methodology for solving complex business problems.
Step 5	Discuss the future research directions and development of the technology.
Step 6	Write and submit your technical report.
Step 7	Present your work to the classroom.

Technical Report Your technical report needs to follow the following requirements:

- Include at least 2000 words but not exceed 4000 words, excluding references and supplementary materials. Use either Times 12 or Arial 11 font.
- Include at least 10 references. Among them, at least 5 references should come from referred publications (such as conference papers, articles, or journals).
- Include a table of contents and have the following structure:

Sections of the reports
Abstract
Introduction: Explain the basic idea of the Data Analytics and Business Intelligence methodologies discussed in this technical report, including what it is about, why it is important, who it impacts, and how it has been studied or developed.
Business problem: A Real-world business case should be incorporated into discussion.
Concepts, theories, technologies: Present the concept, methodologies, techniques, algorithms, and data structures of the selected technology.
Future Development and Conclusion: give your own conclusion based on your findings and discuss the promising future development of the ABI technology

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Submission:

- You need to submit your technical report on Moodle. Follow the "Submit your Assignment 1'sreport" link.
- You must acknowledge and declare that your submitted work has been made by yourself and shows no attempt of plagiarisms. If any case of plagiarisms is suspected, you are required to declare the ownership and authenticity of your work to the marker. Maximum mark deduction may be applied to your work.
- Penalties apply for late submissions. (see Appendix)

Marking Criteria:

- **Plagiarism** If you copy contents (texts, images, tables, etc.) from other sources without proper citations, the Turnitin will detect that. In general, over 30% similarity is NOT acceptable.
- If your work is between 30%-50% similar, your mark will be deducted proportionally (for example, 2%-mark deduction per 1% similarity).
- If your work is found over 50% similar, then you need to resubmit the assignment as well as still get some penalties.

Criteria	Mark
Abstract and Introduction: • Summary and Background of the topic (2) • Why it is important (2) • How it has been studied or developed (1)	5
Business Problem • A relevant complex business problem (3) • Advantages of resolving the problem by using the selected data analytics and intelligence methodology (2) • Disadvantages of resolving the problem by using the selected data analytics and intelligence solution (2) • Detailed explanation on how to apply the technique on the specified problem (3) • Other available techniques that can be used for the specified business problem (2)	12
Concepts, theories, technologies: Concept and Theory • Good description of the concepts and theories behind your choice of data analytics tool or technology (6) • Advantages of the technique (2) • Disadvantages of the technique (2) • Limitations of the technique (2)	12
Future Development and Conclusion • The future of the technique (1) • The future of the technique in relation to ABI (2) • Conclusion (2)	5
References and citations (2), report structure (2), English quality (1) and word limit (1)	6

Appendix

Late submission Penalty

Assignments which are submitted after the due date and time without having received an extension through Special Assessment Circumstances (SAC) will be penalised according to the following:-

- 10% of final marks deducted if submitted within 24hrs of the deadline.
- 20% of final marks deducted if submitted after 24hrs and up to 48hrs of the deadline.
- 30% of final marks deducted if submitted after 48hrs and up to 72hrs of the deadline.
- No grade will be awarded if submitted later than 72hrs after the deadline.

Special Assessments and Circumstances

Students who, due to circumstances beyond their control, miss a test, exam or an assignment deadline or consider their performance in a test, exam or assignment to have been adversely affected, should complete the form available from Student Central. Within any semester, a student may have only one SAC per course. When requesting an SAC for an assignment, the SAC application form must be submitted (along with work completed to date) within the time frame of the extension requested. For example, if the Doctor's Certificate is for one (1) day, then the SAC and work completed must be submitted within one (1) day.

Assistance to Other Students

Students themselves can be an excellent resource to assist the learning of fellow students, but there are issues that arise in assessments that relate to the type and amount of assistance given by students to other students. It is important to recognise what types of assistance are beneficial to another's learning and also what types of assistance are unacceptable in an assessment.

Beneficial Assistance
- Study Groups (highly recommended)
- Discussions (We can have class discussions, if requested.)
- Sharing Reading Material (see the Moodle site)
- Sharing information sources and ideas in your team forums.

Unacceptable Assistance
- Working together on one copy of the assessment and submitting it as your own work.
- Giving another student your work.
- Copying someone else's work. This includes work done by someone not on the course.
- Changing or correcting another student's work.
- Copying from books, Internet, etc., and submitting it as your own work.

Do you want to do the best that you can do on this assignment and improve your grades? You could:

- Talk it over with your lecturer
- Visit Te Puna Ako or Maia for learning advice and support
- Visit the Centre for Pacific Development and Support