ISCG8043
Adaptive Business Intelligence
Semester 2, 2020

School of Computing, Electrical and Applied Technology

Assignment 1

Due Date:	**Sunday, 23 August 2020**
Deadline Time:	**11:59 pm**
Total Marks:	**30**
Course Weighting:	**30%**

1. Specifications and Instructions

Background

Since the computer age dawned on mankind, one of the most important areas in information technology has been that of "decision support". Today, this area is more important than ever. Working in dynamic and ever-changing business environments, modern-day managers are responsible for an assortment of far reaching decisions: Should the company increase or decrease its workforce? Enter new markets? Develop new products? Invest in research and development? It seems that regardless of the decision being made or its complexity, we first need to make a prediction of what is likely to happen in the future, and then make the best decision based on that prediction. This fundamental process underpins the basic approach of various Adaptive Business Intelligence (ABI) technologies suitable for adaptive decision support. In general, ABI refers to the intelligence of machines and stands for an important 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 that:

1. Identify a business problem that is interesting and complex enough so that it requires a BI/AI-based solution, through business requirments analysiss and dimenional modelling.

2. Review ABI technologies related to the above defined business problem, and highlight at least one ABI technology.

   The suitable topics to be discussed in this report include: *Regression analysis, Time Series, Predictive Modelling, Expert systems, Data clustering, Data classification, Association rules learner, Deep Neural Network or other ABI related topics.*

   You are free to review other ABI-related technique/technology not included in the above list as long as the link to business application is <u>clearly</u> stated.

   It is recommended to use **"Ebsco computing databases"** to find academic publications. http://libguides.unitec.ac.nz/c.php?g=288522&p=1923871

3. Assess the practical value of the technology for solving complex business problems.
4. Discuss the future research directions and development of the technology

2. Technical report

Your technical report needs to follow the following requirements.

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

Abstract: A summary of the report

Section 1. Introduction: explain the basic idea of the ABI technology you will discuss in this technical report. A brief summary and background of the topic is desirable, including what it is about, why it is important, who it impacts, and how it has been studied or developed.

Section 2. Business Application: You should incorporate a *real-world business case* into your discussion, review existing implementations of relevant ABI technologies. You need to present your own *view, argument, or critique* on the presented technique/technology or its application.

Section 3. Concept and Theory: present the concept and the theoretic/technical details of the selected technology. Particularly, you need to explain the method, techniques, related algorithms, and data structures utilized by the technology.

Section 4. Future Development and Conclusion: give your own conclusion based on your findings and discuss the promising future development of the ABI technology.

3. Submission

- You need to submit your technical report on Moodle. Follow the "Submit your Assignment 1's report" 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 submission (see Appendix)

4.   <u>Marking Criteria</u>

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 **<u>NOT</u>** 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 <u>resubmit</u> the assignment as well as still get some penalties.

Criteria	Mark

- Abstract and Introduction
  o   Summary and Background of the topic (1)
  o   Why it is important (1)
  o   How it has been studied or developed (1)
	3

- Business Application
  o   Example application related to ABI (2)
  o   Advantages of using the technique on the application (2)
  o   Disadvantages of using the technique on the application (2)
  o   Detailed explanation on how to apply the technique on the specified application (2)
  o   Other available techniques that can be used for the specified application (2)
	10

- Concept and Theory
  o   Good Description of the Concept and Theory (2)
  o   How the Concept and Theory related to ABI (2)
  o   Advantages of the technique (2)
  o   Disadvantages of the technique (2)
     Limitations of the technique (2)
	10

- Future Development and Conclusion
  o   The future of the technique (1)
  o   The future of the technique in relation to ABI (1)
  o   Conclusion (1)
	3

- References and citations (1), report structure (1), English quality (1) and word limit (1)	4
Total	**30**

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Appendix

<u>Late submission Penalty</u>

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.

<u>Special Assessments and Circumstances</u>

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.

<u>Assistance to Other Students</u>

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