COMP8811
Data Analytics and Intelligence
2024

Assignment 2 (Individual)

School of Computing,
Electrical and Applied
Technology

Due Date: Monday, 10 Nov 2024
Deadline Time: 11:59 pm
Total Marks: 100
Course Weighting: 60%
Presentation: 10 Nov 2024

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1. Specifications and Instructions

In this assignment you individually design and develop a BI solution. You find any business problem that is interesting to you to solve by any BI technique/technology you have learned from the class or outside the class. Your proposed solution can be developed based on extending an existing tool or implementing your own system that can practically address the business problem you choose. To accomplish this goal, you need to do the following tasks:

1. **Problem statement**: introduce a business problem that requires a BI/AI-based solution (refer to Assignment 1) and find real-world **dataset**.
   For dataset, you can use Harvard Database at https://dataverse.harvard.edu/, https://www.kaggle.com/datasets, or any other reliable databases, or an actual database from a business if you have access to.

2. **Technology/Technique review**: review existing ABI techniques regarding their suitability of solving the business problem identified. Choose the appropriate one(s) that suit your project.

3. **Solution design and development**: design and develop a BI solution and a strategy that utilize the chosen technology to solve the problem. The development can be either reusing/extending an existing tool or implementing your own system. You are free to study and choose any tool such as R or programming language to be used in your solution development.

4. **Evaluation**: report on your results. You need to discuss the results/findings you obtain from applying your proposed solution to the problem.

5. **Presentation**: present your solution and conduct a live demo of the developed solution to the class.

Your technical report

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 contain the following structure:

   Abstract: A summary of the report

   Section 1. Introduction and problem identified: explain a business problem(s) that you have identified and briefly summarize the basic approach of solving the problem(s) in this project. You should explain the problem's scenario along with its associated dataset. The dataset should not be too small and should have variation.

   Section 2. ABI Technique review: discuss the technical details of your selected technique and highlight the rationale of adopting this methodology. This includes the suitability, advantages/benefits, and limitations when applying to your selected business problem(s) and dataset.

   Section 3. Solution design and development: present a complete design of your proposed solution. The design should include: architecture diagram of your technology system/application, user/program flow-chart, and user interfaces design. An explanation of how the selected technology/technique, including procedures and algorithms, is used in the solution. You should also explain how your solution is developed, including a programing language, software tool, or software library used.

   Section 4. Evaluation: evaluate and discuss your results/findings. The discussion should include your own interpretation and evaluation of the results over the accuracy and related performance criteria. You can also discuss other important things you learn from the analysis.

   Section 5. Conclusion and Future development: give your own conclusion based on your findings, and discuss existing limitations (or issues) and future extension of your solution based on your evaluation.

Your presentation

You will be required to present your problems, technique/technology used, and solution design and development, and conduct a live demo of your solution to the class. Durations are limited to **15 minutes** for the presentation and the demo.

Your presentation and demo should include discussions on: *your business problem, data preparation/pre-processing, AI/BI technique(s) used, results and evaluation, problems faced and limitations of your proposed solution.*

2. Submission

- **You require** to submit the following files on Moodle:
    1. A **technical report.** Follow the "Submit your Assignment 2's report" link
    2. A **presentation** (Power Point)**.** Follow the "Submit your Assignment 2's presentation link
- Program codes of your solution are not needed to be submitted.
- 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)

3. 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
Presentation & Discussion	
- Presentation organization and material	10
- Discussion on findings	10
- Time management	5
Demo	
- Quality of demo scenarios	10
- Discussion on the technologies used	10
- Overall quality of the proposed solution	5
Technical report	
- Abstract, introduction and problem description	7
- Concept, theories, and technology details	10
- Solution discussion, design, and development	20
- Conclusion and future development	7
- References and citations, Report structure, style, and English	6
Total	**100**

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
- Contact the USU Advocate for independent advice
- For contact details and more information, go to www.usu.co.nz