010-2 Component Research project report (equivalent to 2000 words) (2023 MOD007893 TRI2 F01CAM)

Start Assignment

- Due 16 Apr by 14:00
- Points 100
- Submitting a file upload
- File types doc, docx, pdf, ppt, pptx, ppsx, pps, xls, xlsx, odt, wpd, ps, eps, htm, html, hwp, rtf, txt, mp4, wmv, mov, 3gp, avi, m4v, and mkv
- Available until 23 Apr at 14:00

By submitting, I understand that the piece of work submitted will be considered as the final and complete version of my assignment of which I am otherwise the sole author. I understand both the meaning and consequences of plagiarism and that my work has been appropriately attributed unless otherwise stated. I have not knowingly allowed another to copy my work. Please read our **Academic Honesty Policy (https://library.aru.ac.uk/academic/files/Academic%20Honesty%20Policy.pdf)** here.

Assessment Format:	CW - Report
Mode of Submission:	Canvas: Assignment with Submission Where your assessment requires you to submit work to Canvas or an External Tool, it is not recommended to submit via the Canvas App due to some limitations in the App functionality. We would suggest instead that submission is made on a browser from a computer or mobile device. It is not recommended that you submit your assignment or take a quiz on a cellular or satellite connection. This is because loss of internet connection during assessment is most commonly associated with these services, although we understand that sometimes this is the only option. Wherever possible, we would recommend that assessments are submitted or undertaken on WiFi or hardwired (ethernet) connections. Large files are best submitted on a hardwired internet connection (i.e., not WiFi).
Weighting:	This assessment is worth 60% of the Element mark

Assessment Level:	7 **Generic Assessment Criteria and Marking Standards (https://myaru.sharepoint.com/sites/student-learning-assessment/SitePages/assessment-criteria-and-marking-level-7.aspx)**
Element Learning Outcomes:	*The element learning outcomes for this assessment are: 1-6*
Marking Approach:	Fine-graded
Feedback Release Date:	22/05/2024

Assessment Task Detail and Instructions:

Please be aware that this assessment needs to be submitted individually and NO parts of it may be completed as a group. You are **NOT** allowed to work on any parts of this work in groups. Please do **NOT** plagiarise.

Based on the project chosen for element 010 the report submitted by you are also required to produce a Python-based implementation. You are not expected to produce a GUI application for this assignment and all interaction should be accomplished through the console or connect with the pre-templated app.

You need to submit a report before the submission deadline for this assignment element. The report must be well presented and written in a formal style like a research paper. The report **must** include (i.e., deliverables) the following sections as a minimum **in the following order**.

- **Cover Page with Your SID** (Please make sure you upload the file with your SID-e.g., 203948.pdf, code files, data file)
- **The report** file must be documented like a research paper format covering all main sections e.g 1. Abstract, 2. Introduction with main contribution in bullets, 3. Literature review with possible a table (method, dataset, strengths, weakness, main contribution, results), 4. Methodology (properly step-by-step) with main Architecture diagram, 5. Experiments and Results Section with proper visualization of results with the help of evaluation metrices and finally a 6. Conclusion and future work Section. References must be in the correct “ARU Harvard” referencing system. **Click here to learn more Links to an external site. (https://library.aru.ac.uk/referencing/harvard.htm)** .
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- **Your Python code** should meet the following minimum requirements (add comments with coding statements):
- Step by step implementation of main methodology and covering all aspects of necessary data analysis, data processing, data cleaning, data visualization, Ways of training your ML model

(with existing library), Experiments and evaluation results etc

- Contain at least three libraries and implement them for data analysis.
- Contain a range of attributes within all implemented libraries and statistical relations (for example correlation, statistical significance).
- Include a range of code statements with comments within the Python project to illustrate the use of all implemented libraries as well as their methods and attributes.
- The quality of your code matters and has a significant impact on your final mark. You should use **best coding practices(Links to an external site.)** **(https://thedataist.com/ten-good-coding-practices-for-data-scientists/)** (information will be provided in lectures and tutorials) and you should include sufficient comments in your code to establish the relationship to your documented research report as well as your own understanding of the code if asked by the tutor.