COMP1835 (2020/21)	**Graph and Modern Databases**	**Faculty Header ID:**	**Contribution: 100% of course**
Course Leader: **Dr Tatiana Simmonds**	**COMP1835 Coursework**		**Deadline Date:** **Thursday 01/04/2021**
This coursework should take an average student who is up to date with tutorial work approximately 50 hours Feedback and grades are normally made available within 15 working days of the coursework deadline			
Learning Outcomes: All			

Plagiarism is presenting somebody else's work as your own. It includes copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort; copying another student's coursework; stealing coursework from another student and submitting it as your own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set down by the University. Please see your student handbook for further details of what is / isn't plagiarism.

All material copied or amended from any source (e.g. internet, books) must be referenced correctly according to the reference style you are using.

Your work will be submitted for plagiarism checking. Any attempt to bypass our plagiarism detection systems will be treated as a severe Assessment Offence.

Coursework Submission Requirements

- An electronic copy of your work for this coursework must be fully uploaded on the Deadline Date of **Thursday 01/04/2021** using the link on the coursework Moodle page for COMP1835.

- For this coursework you must submit a single PDF document. In general, any text in the document must not be an image (i.e. must not be scanned) and would normally be generated from other documents (e.g. MS Office using "Save As .. PDF"). An exception to this is hand written mathematical notation, but when scanning do ensure the file size is not excessive.

- There are limits on the file size (see the relevant course Moodle page).

- Make sure that any files you upload are virus-free and not protected by a password or corrupted otherwise they will be treated as null submissions.

- Your work will not be printed in colour. Please ensure that any pages with colour are acceptable when printed in Black and White.

- You must NOT submit a paper copy of this coursework.

- All courseworks must be submitted as above. Under no circumstances can they be accepted by academic staff

The University website has details of the current Coursework Regulations, including details of penalties for late submission, procedures for Extenuating Circumstances, and penalties for Assessment Offences. See http://www2.gre.ac.uk/current-students/regs

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- **Detailed Specification**

This coursework is to be completed individually.

The coursework consists of two Parts.

Part 1. Peer review of the research paper
You will be given a research paper on a topic related to modern databases and NoSQL technologies and you are required to produce a peer review of that paper. You peer review report should be a report up to four pages in length that addresses the following important aspects in relation to the reviewed paper:

1. Summary
2. Major issues
3. Minor issues
4. Presentation and style comments
5. References comments

Produce **in your own words** a well-structured review of the paper (about 2000 words). **Do not cut and paste sections from the Internet, as this will receive zero marks.**

See more recommendations on how to write a peer review in the Appendix of this specification

[Up to 40 marks]

Part 2. Implementation

The source code for the implementation task 1 should be submitted as one ZIP file using appropriate submission link.

The implementation evidence for each assignment including a brief explanation should be included into coursework report as PART 2.

Assignment 1: Create large JSON document with your own data and corresponding JSON schema. Make sure your JSON document contains various data types elements, demonstrates complexity and is valid against your JSON schema.
Submit files as a part of the coursework ZIP file. You also can include the code into your Report as an Appendix.
Please provide an appropriate explanation/discussion of your implementation

[Up to 15 marks]

Assignment 2: Create one database in Redis with your own data and show at least 5 different queries on that data.
Please provide an appropriate explanation/discussion of your implementation

[Up to 10 marks]

Assignment 3: Create one database in Cassandra with your own data and show at least 5 different queries on that data. Make sure that your data and your queries demonstrate complexity.
Please provide an appropriate explanation/discussion of your implementation

[Up to 10 marks]

Assignment 4: Create one MongoDB with your own data and show 10 different queries on that data. Make sure that your data and your queries demonstrate complexity.
Please provide an appropriate explanation/discussion of your implementation

[Up to 10 marks]

Assignment 5: Create one Graph database using either Neo4J or AllegroGraph with your own data (at least 25 nodes) and show 10 different queries on that data.
Please provide an appropriate explanation/discussion of your implementation

[Up to 15 marks]

Deliverables

You will be required to submit:
1. **One Report file** (MS Word doc or PDF) that includes two parts:
Part 1: Peer Review report of a given research paper.
Part 2: Implementation Summary: for each implementation assignment provide screenshots of the results with brief explanation. Code for JSON files can be included also into Appendix.
2. **One ZIP file with necessary JSON files**

Grading Criteria

For a distinction (mark 70-79) the following is required:

1. An excellent/very good implementation, all components are working and provide a very good result.
2. An excellent/very good peer review demonstrating a very good/ excellent understanding of NoSQL technology.

Note: In order to be eligible for a very high mark (**80 and over**) you will need to have:
1. An exceptional implementation, showing all requirements implemented to a higher standard.
2. An exceptional peer review, demonstrating a thorough understanding of the NoSQL technology.

For a mark in the range 60 to 69 the following are required:

1. A good implementation, with components are working and providing a good result.
2. A good peer review, demonstrating a good understanding of the NoSQL technology.

For a mark in the range 50 to 59 the following are required:

1. A satisfactory implementation with majority of the components are working and provide an acceptable result.
2. A satisfactory peer review, showing some understanding of the NoSQL technology.

For a mark below 50:
1. A system with a very few requirements implemented.
2. A poor peer review, showing little understanding of the NoSQL technology.

Note: You must specify your Virtual Machine (VM) number in your report. You should not re-build or re-create the system after submission. Implementation elements developed after submission can be detected and will incur a penalty.

Marks will be given for:

- Critical understanding of relevant concepts and appropriate explanation and discussion
- Quality of the peer review report**.**
  - o Are all the required sections included and completed properly?   Is the report clear, well formatted, and easy to read? Does it have a logical structure?   Does it have a discussion on design decisions? Is the evaluation realistic, does it show that you have really thought about your system and how you went about developing it?

Assessment Criteria

Part 1 Peer review report.
The total maximum for Part 1 **- 40 marks.**

- Summary [Up to 5 marks]
- Major issues [Up to 10 marks]
- Minor issues [Up to 10 marks]
- Presentation and style comments [Up to 10 marks]
- References comments [Up to 5 marks]

Part 2 The implementation
The total maximum for Part 2 **- 60 marks.**

Assignment 1 [Up to 15 marks]

Assignment 2 [Up to 10 marks]

Assignment 3 [Up to 10 marks]

Assignment 4 [Up to 10 marks]

Assignment 5 [Up to 15 marks]

Appendix

How to Structure Your Peer Review Report (adopted from Wiley 'Step by step guide to reviewing a manuscript' https://authorservices.wiley.com/home.html)

Try to answer all the questions. If you are following an informal report format you could structure your report in three sections: summary, major issues, minor issues.

Summary

- Give positive feedback first. Authors are more likely to read your review if you do so. But don't overdo it if you will be recommending rejection
- Briefly summarize what the paper is about and what the findings are
- Try to put the findings of the paper into the context of the existing literature and current knowledge
- Indicate the significance of the work and if it is novel or mainly confirmatory
- Indicate the work's strengths, its quality and completeness
- State any major flaws or weaknesses and note any special considerations. For example, if previously held theories are being overlooked

Major Issues

- Are there any major flaws? State what they are and what the severity of their impact is on the paper
- Has similar work already been published without the authors acknowledging this?
- Are the authors presenting findings that challenge current thinking? Is the evidence they present strong enough to prove their case? Have they cited all the relevant work that would contradict their thinking and addressed it appropriately?
- If major revisions are required, try to indicate clearly what they are
- Are there any major presentational problems? Are figures & tables, language and manuscript structure all clear enough for you to accurately assess the work?
- Are there any ethical issues? If you are unsure it may be better to disclose these in the confidential comments section

Minor Issues

- Are there places where meaning is ambiguous? How can this be corrected?
- Are the correct references cited? If not, which should be cited instead/also? Are citations excessive, limited, or biased?
- Are there any factual, numerical or unit errors? If so, what are they?
- Are all tables and figures appropriate, sufficient, and correctly labelled? If not, say which are not

On Presentation and Style

Your review should ultimately help the author improve their article. So be polite, honest and clear. You should also try to be objective and constructive, not subjective and destructive.

You should also:

- Write clearly and so you can be understood by people whose first language is not English
- Avoid complex or unusual words, especially ones that would even confuse native speakers
- Number your points and refer to page and line numbers in the manuscript when making specific comments
- If you have been asked to only comment on specific parts or aspects of the manuscript, you should indicate clearly which these are
- Treat the author's work the way you would like your own to be treated

On References

- Check if the references are current and present the wide range of sources (books, journal articles, internet sources)
- Check if the references are done correctly, following the Harvard Referencing system
- If the citations in the text are done correctly