Faculty of Arts, Science and Technology

CSY3024 (Databases 3)

Level 6

Assignment 2 (2019/20)

Module Leader: **Dr James Xue**

☎ 01604893390

Email: ***james.xue@northampton.ac.uk***

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Assignment 1

Weighting: **50%**
Submission deadline: **3rd May 2020 (by 23:59)**

Learning Outcomes Assessed:

a) Understanding of major changes in database structure, database system requirements and database technology from earlier relational database systems.
b) Understanding of NoSQL databases (e.g., graph databases, document databases), various data models and their fundamental differences to earlier database systems (e.g., RDBMS).
c) Having relevant kills of DBMS techniques for writing, processing, optimisation and execution of high-level queries and knowledge of other aspects such as database transaction management, security, etc.

Introduction

This assignment is compulsory as it is a major part of the formal assessment. **Read this document carefully and make sure that you are clear about what you have to do, and what you have to hand in, before you attempt the assignment.**

You could demonstrate your work to the module tutor during practical sessions for formative feedback prior to the submission date.

Assignment work

This assignment has three main parts as below:

I. **Part 1 (10%)** – learning diary including lab exercises and individual reflection. Lab exercises will be given during usual teaching sessions. In the diary, the following can be included: approaches to the assigned tasks; what worked and what didn't and the reason(s); what the solution(s) were; what have been learnt from the exercises and what still need to be improved, etc.

II. **Part 2 (30%)** – MongoDB task. The dataset used in first assignment has been converted into a .json file (refer to the attachment on NILE), contains information about the English Premier League (EPL) matches. Students are expected to create a MongoDB database by using the converted EPL dataset and write codes for the following queries:

1) Show all the EPL teams involved in the season.
2) How many matches were played on Mondays?
3) Display the total number of goals "Liverpool" had scored and conceded in the season.
4) Who refereed the most matches?
5) Display all the matches that "Man United" lost.
6) Write a query to display the final ranking of all the teams based on their total points.

Note: in order to answer the queries above, students need to have good understanding and practice on MongDB commands, particularly the aggregation commands. Solutions without some evidence of exercises in the learning diary are suspicious, and likely lead to plagiarism investigation.

III. **Part 3 (60%)** – Essay writing. Write an essay with the title: "Bigdata analytics and the role of NoSQL databases".

What should be submitted

ONE single report for all three parts needs to be submitted on NILE. The report should be in the format of MS word or PDF and named using your student id. The report should consist of the following parts:

- **Part 1** - no need to have an overall reflection at the beginning of the report. The learning diary with commands (as texts) and results (as screenshots) and individual reflection should all be organised in a chronological order, and attached in the report as an appendix.

- **Part 2** - students need to clearly document: 1) how the dataset is imported into the database; 2) the query solutions with detailed explanation.

- **Part 3** - students need to start a new page for the essay in the single report. The essay needs to be around six A4 pages and in the IEEE conference paper format with proper Harvard references (refer to the attached template and Harvard reference guide on NILE). Plagiarism (by copying and pasting from any other resources) is prohibited and university policy will be strictly followed. Please note that rephrasing the same thing from other resources is still considered as plagiarism. The key is to do a lot of research/reading and write your own understanding of the topic in your own words.

Note: there is NO demo for this assignment.

What will be assessed

- Part 1 – the number of exercises and reflection quality in the learning diary.
- Part 2 – the MongoDB database creation, the query solutions and explanation of the codes.
- Part 3 – contents, structure and quality of academic writing.

Grade /Item (weighting)	PART 1	PART 2		PART 3	
	Lab Exercises & individual reflection (10%)	Solutions (15%)	Explanation (15%)	Contents of essay/paper (30%)	Structure and academic writing quality (30%)
No submission	No submission of lab exercises and diary entries.	Nothing submitted or substantially plagiarised.	No explanation of solutions.	Non submission	Non submission
Fail	Significant lack of evidence of engagement - very few exercises have been attempted and/or very few entries in the diary. Very poor quality of reflection.	Very little codes have been developed; none/very few of the queries have been attempted.	Poor quality of solution codes, difficult to read and understand; very little explanation.	There is very little evidence of understanding of the topic.	The report is poorly written in terms of structure and quality of writing and readability.
Pass	Some exercises are attempted, there are sufficient amount of reflection about learning activities throughout all the exercises.	Database has been created using the dataset; a minimal number of queries have been attempted/some of which are correct.	The explanation of the codes is sufficient to get a pass.	There is sufficient evidence of some research and understanding of the topic.	Report contains a basic structure but no or very limited amounts of content have been added. No evidence of reflective comments. Very limited number of sources in the bibliography.
Good	Most of the exercises have been completed, there are some good reflections on the learning activities throughout the exercises.	The database has been created and a good number of the queries have been answered correctly.	The explanation of the solutions is good.	Good understanding of the topic.	Report is descriptive. An attempt at documenting some of the required process has been made and is accurate. Some evidence of reflective comments. Bibliography is in Harvard style.
Excellent	All the exercises have been completed and there are quality reflection on the learning activities.	The database has been created and most of the queries have been answered correctly.	The explanation is excellent, which shows good knowledge and skills in this area.	The is clear evidence of good research and excellent understanding of the topic.	Report is very well written in terms of structure, writing quality and readability. Evidence of reflective comments and additional reading by a relevant Harvard style references.
Outstanding	All the exercises have been completed and there are evidence of extra attempts/tests of commands for extending understanding of subject knowledge and further development of skills. Exceptionally good reflection on the learning activities throughout the learning process.	The database has been created and all the queries have been answered correctly.	Exceptional quality of explanation, which clearly demonstrates excellent knowledge/skills in this area.	Exceptional quality of understanding of the given topic.	An excellent report that shows extensive reflection on the work conducted with substantial evidence of additional reading and critical thinking of subject matters. Where appropriate ,arguments are well supported by Harvard style references.