Faculty of Arts, Science and Technology

**CSY3024 (Databases 3)**

Level 6

Assignment 1

(first-sit, 2022/23)

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| Assignment 1 |

Weighting: **50%**

Submission deadline: **(April 25th)**

Learning Outcomes Assessed:

LO1 Learning to learn: recognise their own major areas of weakness and accept the need for further work in those areas.

LO2 Design, build, and test a simplified database applications, corresponding to a particular specification.

LO3 Communication skills: outline the function and intercommunication between the various hardware/software components of a deployed application.

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| 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.

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| Assignment work |

This assignment has two main parts as below:

1. **Portfolio (30%)** – Personal portfolio including learning activities and self-reflection.

* Learning activities include some research work and the practical activities, which are given weekly.
* The reflection should be your thoughts/understanding of the topics. Note: it should be in OWN words (1st person) and not copy of lecture notes or information from other sources.
* It’s students’ responsibility to keep their portfolio safe. Cloud storage (e.g., Dropbox or Google Drive) is recommended.
* There will be a separate link on NILE for the submission of student portfolios by the assignment deadline.

1. **Assignment task (70%)** - development of a graph database for a given dataset, which can be found in the ‘Assignment’ section on NILE.

The dataset (refer to EPL\_matches.csv on NILE) contains information about English Premier League (EPL) matches since the 2000/01 season. Students are expected to analyse the given dataset, design an appropriate graph model, create a graph database to store information in the dataset and to perform the following queries using Cypher Query Language.

* 1. List all teams that have ever played EPL matches since 2000.
  2. Display all matches “Liverpool” won against “Man United” since 2010.
  3. Display top five referees and the number of matches they refereed since 2000.
  4. Display all teams and the total numbers of goals they scored and conceded in the 2020/21 season;
  5. Which team had the best home winning record since 2000.
  6. Which team lost the most matches in 2020/21 season?
  7. Which teams lost the 1st half but won the match in 2020/21 season. \*\*\*
  8. Which team earned the highest ever points in all seasons since 2000.
  9. Display the final league table ranking of all teams in the 2020/21 season (based on the total points).
  10. Which team had the longest unbeaten record;

Note: Match points: 3 points for a win, 1 point for a draw, and 0 point for a loss.

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| What to be submitted & assessed |

**TWO** separate documents (in the format of MS word or PDF) for both parts needs to be submitted on NILE.

1. **Portfolio (30%)**

The portfolio should be organised by weekly sections – weekly learning activities and self-reflection should be clearly indicated in the document.

1. **Assignment report (70%)**

Students need to clearly document the process of analysis of dataset, design of the graph model, creation of database and answers of the queries. Cypher codes needs to be clearly explained as texts and query results should be included as screenshots in the report.

**A short assignment demo video**

Students are required to provide a 5-minute (± 2 minutes) video demo, which is COMPULSORY and should at least include the following: the design and justification of the graph model and explanation of database creation and query solutions. Due to the timing, students don’t have to talk through all queries, just pick a few that are worth highlighting. **Failure in submission of the video demo will automatically result in a ‘Fail’.** The demo videos need to be uploaded to video.northampton.ac.uk; please use the default ‘**Unlisted**’ setting so that the uploaded video can be viewed by the marker. The link to the demo video must be on the front page of the assignment report.

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| Marking criteria |

will be assessed

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| Grade /Item (weighting) | PART 1 | | PART 2 | | Report Quality  (20%) | Demo  (10%) |  |
| Learning activities (20%) | Reflection (10%) | Solutions (30%) | Quality of Solutions  (10%) |  |
| No submission | No submission of lab exercises and diary entries. | No reflection summary | Nothing submitted or substantially plagiarised. | No documentation of process. | Non submission | Non submission of video demo. |  |
| 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; limited amount of writing. | 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. | The report is poorly written in terms of structure and quality of writing and readability. | Video demo is available, but of poor quality in terms of length, video and audio. |  |
| Pass | Most of the exercises have not been attempted and there are sufficient amount of reflection in the portfolio. | There are sufficient amount of reflection about learning activities throughout all the exercises. | Good amount of effort in creating the graph database for given dataset; a minimal number of queries have been attempted, some of which work corrected. | Code designs generally follow key concepts from lectures and lab exercises, but may contain major issues. | 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. | Video demo is acceptable in terms of length, video and audio quality. |  |
| Good | All exercises have been completed and there are good evidences of reflection in the portfolio. | Good reflection about the learning activities throughout the exercises. | A good graph database has been created, there are some minor issues; and most of the queries have been answered correctly. | Code designs generally follow key concepts from lectures and lab exercises, there are a few minor issues. | 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. | Good video demo in terms of length, video and audio quality; good understanding of subject matters and explanation of own work. |  |
| Excellent | All the exercises have been completed and there are quality reflection on the learning activities. | High quality reflection about the learning activities has been written. | The database creation is almost perfect, most of the queries have been answered correctly. | Code designs closely follow key concepts from lectures and lab exercises; there is no issue observed. | 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. | Excellent video demo in terms of length, video and audio quality; the way of conduct the demo and explanation of assignment work is of high quality. |  |
| 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 writing is concise and well structured. | An outstanding design of the graph database based on the given dataset; all the queries have been answered correctly. | Exceptional quality of database design and query solutions. | 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. | An outstanding video demo in all aspects. | . |