# Luminus Technical University College - Assignment Brief (RQF)

## Higher National Diploma in cloud computing

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| **Student Name** | | **Shahed Montaser** | | | **Language of assessment** | | | **AR** | **EN** |
| **College ID:** | | | **22036814** | |
| **Pearson ID:** | | | **RE67234** | |
| **Unit Number and Title** | |  | 1. **Database Design and Development in the Cloud** | | | | | | |
| **Academic Year** | | **2022/2023** | | | | | | | |
| **Unit Tutor** | | **Amneh Shaban, Hala Majdalawi, Safaa Bani Essa** | | | | | | | |
| **Internal Verifier Name and Approval (Signature)** | | **Aya Karajeh** | | | | **Approval Date: 5/5/2023** | | | |
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| **Assignment number and Title** | | **1** | **Nitrogen Gym Database System** | | | | | | |
| **Issue Date (1St Submission)** | | **7/5/2023** | | **Submission Date (1st Submission)** | | | **17/5/2023** | | |
| **Issue Date (2nd Submission)** | | **20/5/2023** | | **Completion Date (2nd Submission)** | | | **23/5/2023** | | |
| **Submission Format** | | | | | | | | | |
| **Format:**  The submission is in the form of 1 document. You must use font **Times New Roman size 12, Headings size 14**, set number of the pages and use multiple line spacing at 1.15. The reference follows **Harvard referencing system**.  **Submission:**  Students are mandatory to submit the assignment in due date and in a way requested by the Tutor. The form of submission will be a soft copy posted on the LMS (D2L).  **Note:**  The Assignment must be your own work, and not copied by, from another student, or from books etc. If you use ideas, quotes or data (such as diagrams) from books, journals or other sources, you must reference your sources, using the Harvard style. Make sure that you know how to reference properly, and that understand the guidelines on plagiarism. If you do not, you definitely will not pass. | | | | | | | | | |
| **Unit Learning Outcomes** | | | | | | | | | |
| **LO1** | **Design a cloud-based relational database system using appropriate design tools and methods for a substantial problem.** | | | | | | | | |
| Transferable skills and competencies developed | | | | | | | | | |
| Research Skills, Analytical Skills to conduct own analysis to draw conclusions, Providing information based on collation, analysis and interpretation of data, determine user and system requirements, Draw ERD and Relational Schema, Cloud Services. | | | | | | | | | |
| **Vocational scenario:** | | | | | | | | | |
| There is a national company in Amman-Jordan, **Nitrogen Gym**, which deals in **Gym Branches and Products** all over Amman, Jordan. They have a complex IT system based on internet tunneling technology that works well. The drawback is that updates and network connections can be problematic at high load times. There are also security and access problems for suppliers, employees and customers in some less technologically, meaning that there is a need for a major update and development of the system in the near future.  You are an employee that works as a Database Developer at **Logic Leaders** Company have been tasked with prototyping a cloud-based database system to demonstrate whether it would be both applicable and beneficial to make a move to the cloud. In addition, this cloud-based database system needs to improve the members experience and track their progress.  The Gym has a variety of equipment and offers a range of classes, from yoga to Zumba to kickboxing. The **Nitrogen Gym** company wants to create a system that provides personalized workout plans and tracks member’s progress over time.  This Gym Database System contains Member’s Information. The member will have a unique ID, name (first and last name), email address, nationality, phone numbers, age, weight, height birth of date and membership type (monthly, yearly).  In addition, the Gym Database System includes Equipment information to list all the available equipment at the gym. The information are equipment id, equipment name and equipment location. The member will use the equipment based on his/her work plan. Each member can play on one or many equipment’s and one or many members use each equipment.  Nitrogen Gym offers many different classes. The database system should include the information of each class, including the class name, class id, instructor name, and class duration and class schedule. Nitrogen Gym will use this information to recommend classes to members based on their fitness goals and workout plan. Each member can attend only one class. In addition, each class can have one or many members.  With all of this information, Nitrogen Gym can use the database system to provide personalized workouts and track member’s progress overtime. In addition, the system can be used to recommend equipment and classes to members based on their fitness goals.  **There are some rules and restrictions that should be taken in concern when building the Nitrogen Cloud Database System which are the following:**   * It Requires a **Backup.** * It Requires a **Password** for Security. * **Checking the internet service provider.** * Do **not register** any member with the same email. * Do **not reserve** any class without specifying its schedule and duration. * If the member did not fill the **nationality**, fill it with “Jordanian” by default. | | | | | | | | | |
| Assignment activity and guidance | | | | | | | | | |
| As a Cloud Database Developer employee at Logic Leaders company, you are required to build Nitrogen Cloud Database System. In order to build this system you will need to complete the following tasks.  In the beginning, you need to **Formulate** at least 8 user requirements and at least 5 system requirements in details based on Nitrogen Cloud Database System. **After that, outline the cloud database system by:**   * **Scheme** the Entity Relational Diagram (ERD). In addition, list the entities, their attributes, and their relationships between tables. * **Designing** the Relational Cloud Database into logical database design which will include the Database Schema (fields, data types, and constraints), the mapped tables from the ERD, as well identify the primary and foreign keys.   After that, you should **determine** the options that could be applied for hosting the Nitrogen Cloud Database System by providing (Cloud based Platforms, Cloud Hosting Security, Cloud Hosting Services, and Cloud Hosting Vendors).  Nitrogen Cloud Database System needs some design to be more interactive and to get to the main idea of the system. Therefore, you need to **construct** a complete design with set of simple input and output interfaces using wireframe, figma or any other interface-designing tool.  **Measure** and **reflect** whether the given design (ERD and Logical Design Schema and interface design) is representing the identified user and system requirements to assess the effectiveness of the design on the chosen cloud host method. | | | | | | | | | |
| **Recommended Resources**  **Please note that the resources listed are examples for you to use as a starting point in your research – the list is not definitive.**  **Microsoft Visio**  **Erdplus.com**  **Draw.io**  **Wireframe**  **Figma** | | | | | | | | | |

**Learning Outcomes and Assessment Criteria**

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| Pass | Merit | Distinction |
| **LO1** Design a cloud-based relational database system using appropriate design tools and methods for a substantial problem | | **D1** Evaluate the effectiveness of the design in relation to user and system requirements, and the chosen cloud-hosting method. |
| **P1** Design a cloud-hosted relational database system using appropriate design tools and techniques, with clear statements of user and system requirements.  **P2** Identify options for hosting your database in the cloud and ensuring its security. | **M1** Produce a comprehensive design for a fully functional system with details of the cloud-hosting method chosen |