**“ASSIGNMENT BRIEF”**

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| Qualification | Pearson BTEC Higher National Diploma in Computing. |
| Unit Number and Title | **4. Database Design and Development** |
| Start Date | 1st August, 2022 |
| Hand In Deadline | 31st August, 2022 |
| Assessor Name | Ms.Nazia Husain |
| Assignment No | 04 |
| Assignment Title | Database Systems and its Design Tools |

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| **Purpose of this assignment**  The aim of this unit is to provide students with wider knowledge of database design, implementation of a fully relational database system and testing and documentation of different database models. |
| **Assignment Description**  This Assignment covers the Learning outcomes LO1, LO2, LO3 and LO4.  LO1: Use an appropriate design tool to design a relational database system for a substantial problem. (P1,M1,D1)  LO2: Develop a fully functional relational database system, based on an existing system design. (P2,P3,M2,M3,D2)  LO3: Test the system against user and the system requirements. (P4,M4)  LO4: Produce technical and user documentation. (P5, M5, D3) |
| **Preparation guidelines**   * The report should be grammatically correct and word processed. * The written report must be presented in a professional manner, front page, contents page, page numbering, bibliography and annexes. * Student’s Name and the Unit Name needs to be either as Header or Footer. * Use the Font as Times New Roman 12 and 14 (Headings) and 1.5 line spacing. * Identify any references and Use the Harvard referencing system. * Complete the Student Submission Declaration form and sign the statement of authenticity. * You will pass the assignment only if you achieve all Pass criteria. Student must provide evidence that learning outcomes of the subject have been met. * Assignment will be checked for Plagiarism. Appropriate Actions may be taken as per Explore / BTEC Plagiarism Policy. * **The assignment should not contain any contents including references cited from websites like** [www.ukessays.com](http://www.ukessays.com), [www.studymode.com](http://www.studymode.com), [www.slideshare.net](http://www.slideshare.net) , [www.scribd.com](http://www.scribd.com). |
| **Good practice**   * Make backup of your work in different media (hard disk, memory stick etc.) to avoid distress for loss or damage of your original copy. * Make an extra hardcopy of your work submitted for your own reference or later use. |

**Scenario:**

IMPULSE Academy College holds an inter college sports fest called “Summer Games” in the end of semester comprising of numerous activities ranging from table/card games such as monopoly to hard physical field games such as basketball. Students will be able to show interest and participate in any activity of their choice.

The total number of events during the summer games is 5 namely Monopoly, Foosball, Basketball, Cricket and Badminton. Each event comprises of different number of participants depending upon the game. Records will be kept for each registered player including their names, age, school/college and place, participating events/activities, their achievements in such events and awards given. Records will also be kept for each event, participating registered players, participants' scores/activities to identify winners and present awards, and criteria/rules for participation.

The summer game requires a design of a database with the above specifications indicating necessary keys and relationships.

**Task 1: Database design and design tools for a given problem.**

1. Design a relational database system using appropriate design tools and techniques containing at least four interrelated tables, with clear statements of user and system requirements.
2. Produce a comprehensive design for a fully functional system which includes interface and output designs, data validations and data normalizations.
3. Evaluate the effectiveness of the design in relation to user and system requirements.

**LO1**: **P1, M1 & D1**

**Scenario:**

After the completion of the database design, you are asked to develop a relational database based on the existing user requirements. While designing, you have to take measures to ensure the security of the system as well.

**TASK 2: Developing a fully functional relational database system.**

1. Develop the database system with evidence of user interface, output and data validations and querying across multiple tables.
2. Implement a query language into the relational database system.
3. Implement a fully functional database system which includes system security and database maintenance.
4. Assess whether meaningful data has been extracted through the use of query tools to produce appropriate management information.
5. Evaluate the effectiveness of the database solution in relation to user and system requirements and suggest improvements.

**LO2: P2, P3, M2, M3 and D2**

**Scenario:**

The relational database that you have designed is ready to be used. The contestants can now successfully enter their information and store their details in the database. After the successful entry of all the details, you have to test the system to make sure that all the user requirements are being satisfied and that the system is safe and secure for the future use.

**TASK 3: Testing the systems against requirements.**

1. Test the system against user and system requirements.
2. Assess the effectiveness of the testing including an explanation of the choice of test data used.

**LO3: P4 and M4**

**Scenario:**

The system that you have designed is tested successfully. The college wants to keep the system for future use. The final assignment given to you is to document the entire designing process including technical documentation and user documentation. You have been asked to include diagrams to show the movement of data as well.

**TASK 4: Technical and user documentation.**

1. Produce technical and user documentation.
2. Produce technical and user documentation for a fully functional system, including diagrams showing movement of data through the system and flowcharts describing how the system works.
3. Evaluate the database in terms of improvements needed to ensure the continued effectiveness of the system.

**LO4: P5, M5 & D3.**

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