**ASSIGNMENT 2 BRIEF**

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| **Qualification** | **BTEC Level 5 HND Computing and Systems Development** | | |
| **Unit number and title** | Unit 17: Database Design Concepts | | |
| **Assignment issued** |  | **Assignment due** |  |
| **Assessor name** |  | | |

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| **Assignment title** | **Understanding Database Development Methodology and Designing, Implementing Databases**  This assignment considers the skills required to demonstrate knowledge and understanding in relation to gather requirements, analyze, design and develop databases using data management systems. This assignment will cover Learning Outcome 2 and 3 of this unit.  This assignment will be broken into tasks and you can use these tasks as sections/pages within your assignment. |
| **Aim of the assignment** | This assignment satisfies the following learning outcomes and assessment criteria:  **LO2 Understand database design techniques**  2.1 analyse a database developmental methodology  2.2 discuss entity-relationship modeling and normalisation  **LO3 Be able to design, create and document databases**  3.1 apply the database developmental cycle to a given data set  3.2 design a fully functional database (containing at least four inter-relational tables) including user interface |
| **Specific requirements**  *(see Appendix for assessment criteria and grade descriptors)* | **Scenario**  Please see assignment brief 1 for the scenario description.  **Task 1 (LO2 2.1, M3, D2)**  Make a presentation (slides) about a database developmental methodology with following steps (in brief)  - Gathering information  - Requirements and business rules  - Database designs  - Normalization  - Physical design  - SQL Implementation  **For each of these steps please make the following points**  1. What is this step?  2. What do we do in this step?  3. What are the deliverables from this step?  4. Give examples to demonstrate your points whenever applicable.  **Hint**: Please see the textbook of this course, and briefly review these topics in your presentation  **Task 2 (LO2, 2.2, M3, D2)**  Make another presentation (slides) to present about  - Entity Relationship Diagram (in details)  - Normalization (up to 3rd Normal Form) – (in details)  **Task 3 (LO3, 3.1, M1, M2, M3, D2, D3)**  Make another presentation (slides) about the design of your database.  In this task you need to provide following artifacts.  1. Use-case diagrams for the system  2. ERD for this Database (with at least four relations)  3. Normalization statements   * Only have to state every of your tables is at least 3rd NF * You will need to give one statement for each table * You don’t have to show checking steps * If any of your table is not up to 3rd NF, please explain why?   **Task 4 (LO3, 3.2, M1, M3, D2, D3)**  **Write your code to implement your database**  You will need to code your design using SQL Code (Code, not design) and will need to submit this source code.  **Screen design + supporting queries**:  Design a set of screens (working or just prototyping) and write supporting queries for the following tasks  1. Adding new category  - Create screen  - Write supporting query/queries for this task (e.g., insert new category)  2. Adding new item  - Create screen  - Write supporting query/queries for this task (e.g., insert new item)  3. Signup  - Create screen  - Write supporting query/queries for this task (e.g., insert new customer)  4. Home page: Listing categories and featured products per category  - Create screen/screens  - Write supporting query/queries for this task  5. Home page: View products by category  - Create screen/screens  - Write supporting query/queries for this task  6. Search for product on homepage  - Create screen/screens  - Write supporting query/queries for this task  7. Purchase products  - Create screen/screens  - Write supporting query/queries for this task  8. Viewing sale report from a specified date range  - Create screen/screens  - Write supporting query/queries for reporting all orders from a specified date range  (Submit your source code, and put all the screens and supporting queries into one presentation)  **Important**:  Before assignment presentation, student will need to prepare a questionnaire to send to peers for evaluating the effectiveness of the system (whether the system meets the requirements) and possible improvements. This feedback will be used in the next assignment.  - Note also to ask each question for each functionality supported  - You should also ask non-functionality questions like about performance, etc. |
| **Student guidelines** | 1. You should use tables, diagrams and figures where appropriate and be sure to give sources of information.  2. You should include a list of references to all cited sources using the Harvard referencing system. |
| **Submission requirements** | Besides the soft copy with  1. Your presentation for task 1  2. Your presentation for task 2  3. Your presentation for task 3  4. Your source code for task 4  5. Your presentation for task 4  Students are expected to submit hard copies of the presentations (not the source code) |

**APPENDIX 1: ASSESSMENT CRITERIA AND GRADE DESCRIPTORS**

**Merit grade:**

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| **Merit descriptors** | **Indicative characteristics** | **Contextualization** |
| M1 Identify and apply strategies to find appropriate solutions | * Effective judgments have been made * Complex problems with more than one variable have been explored * An effective approach to study and research has been applied | To achieve M1 you need to make judgments for every decision you make while designing, developing your database (Task 3, Task 4) |
| M2 Select/design and apply appropriate methods/techniques | * Relevant theories and techniques have been applied * A range of methods and techniques have been applied * The selection of methods and techniques/sources has been justified | To achieve M2 a range of methods and techniques about designed have been used and justified (Task 3) |
| M3 Present and communicate appropriate findings | * The appropriate structure and approach has been used * Coherent, logical development of principles/concepts for the intended audience   A range of methods of presentation have been used and technical language has been accurately used | To achieve M3 you must produce relevant, coherent and appropriate language suitable for the target audience. Appropriate technical language will have been used. (All tasks) |

**Distinction grade:**

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| **Distinction descriptors** | **Indicative characteristics** | **Contextualization** |
| D1 Use critical reflection to evaluate own work and justify valid conclusions |  | Not in this assignment |
| D2 Take responsibility for managing and organising activities | * Autonomy/independence has been demonstrated * Substantial activities, projects or investigations have been planned, managed and organized * Activities have been managed * The unforeseen has been accommodated * The importance of interdependence has been recognized and achieved | To achieve D2, autonomy/independence has been demonstrated. Student managed and completed all tasks on time (check form all tasks). |
| D3 Demonstrate convergent/lateral/creative thinking | * Ideas have been generated and decisions taken * Self-evaluation has taken place * Convergent and lateral thinking have been applied * Problems have been solved * Innovation and creative thought have been applied | To achieve D3, problem has been solved  Innovation and creative thought have been applied  Self-evaluation has been taken place  Check for evidence from task 3, task 4 |

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| This brief has been verified as being fit for purpose | | | | | |
| **Internal Verifier 1** |  | Signature |  | Date |  |
| **Internal Verifier 2** |  | Signature |  | Date |  |