**BTEC Assignment Brief**

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| **Qualification** | | | Pearson BTEC Level 3 National Diploma in Computer Science  Pearson BTEC Level 3 National Diploma in Computing Business Information Systems  Pearson BTEC Level 3 National Extended Diploma in Computing |
| **Unit number and title** | | | **Unit 18: Relational Database Development** |
| **Learning aim(s)** (For NQF only) | | | **A:** Examine the purpose and structure of data storage in relational database management systems |
| **Assignment title** | | | Workplace4training Relational Database investigation |
| **Assessor** | | | Kris Leeson |
| **Issue date** | | |  |
| **Hand in deadline** | | |  |
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| **Vocational Scenario or Context** | | | Workplace4training is a training provider offering a range of courses in first aid, fire safety training, health and safety and food hygiene to businesses, organisations and individuals.  Currently the company has six assessors delivering a variety of courses at venues across the West Midlands. Each assessor specialises in one qualification area and delivers one course.  These details are stored on different databases and the manager is finding it time-consuming to update each of the records. The assessors have also complained that they have to access all of the databases to ensure that they have the correct information.  You have just started work as a database administrator and the manager has asked you to create a relational database system to record all of the course details, assessor details, venue details, student details and course schedule. |
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| **Task 1** | | | **Data storage in relational database management systems**  Before you design the relational database system your first task is to evaluate the principles of relational database models and the importance of normalisation in providing reliable and efficient data structures.  Your manger would like you to start by evaluating the different types of relational database management systems available and their operating system support.  Evaluate the role of relational data structures:   * relation * attribute * domain * tuple * degree * cardinality * relational database. * relational algebra sets, symbols * entity relationships models including, one-to-one, one-to-many and many-to-many.   It is now time to evaluate how data is manipulated in data structures and relational databases when:   * updating, inserting, modifying and deletion * retrieval of data for queries and reports * administration of users * security, integrity and recovery.   Evaluate the different stages of normalisation, including:   * un-normalised form (UNF) * first normal form (1NF) * second normal form (2NF) * third normal form (3NF) * Boyce-Codd normal form (BCNF).   At the end of the report you should provide an evaluation of the importance of normalisation in developing reliable and efficient data structures at each stage of the normalisation process:   * anomalies (update, insertion, deletion) * primary keys, foreign keys, composite keys * indexing * referential integrity * data dictionary * cascading update, deletion techniques * joins, unions and intersects   Use the data that the manger has provided to support your normalisation examples. |
| **Checklist of evidence required** | | | A written report or presentation explaining data storage and structures, the process of normalisation and the advantages of using relational database systems. |
| **Criteria covered by this task:** | | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | | |
| 18/A.D1 | Evaluate the principles of relational database models, the importance  of normalisation and how they can provide reliable and efficient data structures. | | |
| 18/A.M1 | Analyse the principles of relational database models, the importance of  normalisation and how they can provide reliable and efficient data structures. | | |
| 18/A.P2 | Explain the process of normalisation within a relational database. | | |
| 18/A.P1 | Explain the principles of relational database models and how they are used to provide reliable data structures. | | |
| **Sources of information to support you with this Assignment** | | Provides an overview of relational database management systems [http://www.computerweekly.com/feature/Choosing-the-right-relational database-management-system](http://www.computerweekly.com/feature/Choosing-the-right-database-management-system)  Provides an overview of conceptual, logical and physical modelling  <http://www.1keydata.com/datawarehousing/data-modeling-levels.html>  Provides an overview of the normalisation process  <https://support.microsoft.com/en-us/kb/283878> | |
| **Other assessment materials attached to this Assignment Brief** | | eg, work sheets, risk assessments, case study | |