**BTEC Assignment Brief**

|  |  |  |
| --- | --- | --- |
| **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) | | **B**: Design a relational database solution to meet client requirements  **C**: Develop a relational database solution to meet client requirements |
| **Assignment title** | | Workplace4training Relational Database Solution |
| **Assessor** | | Kris Leeson |
| **Issue date** | | 06/12/21 |
| **Hand in deadline** | | 07/06/23 |
|  | | |
|  | | |
| **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 the course details database, venue details database and course schedule details 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 the company records. He would like the following information recorded on the relational database. He would also like you to propose other information that might be usefully.  **Assessor Details**  Assessor name, Assessor ID, Assessor address, Post code  Assessor mobile number, Assessor email address, Course name, Course ID, Venue name, Venue ID, Venue address, Post code, Venue mobile number, Manager name, Venue email address, Venue cost, Google map link, Student name, Student ID (auto number), Student Address, Post code, Email address, Student mobile number, Notes.  **Course** **Details**  Course name, Course ID, Course date, Course cost, Assessor name, Assessor ID, Course duration, Venue name, Venue ID, Venue address, Post code, Venue mobile number, Manager name, Venue email address, Venue cost, Google map link, Notes.  **Venue Details**  Venue name, Venue ID, Venue address, Post code, Venue mobile number, Manager name, Venue email address, Venue cost,  Google map link, Course name, Course ID, Assessor name, Assessor ID, Assessor address, Post code, Assessor mobile number, Assessor email address, Student name, Student ID (auto number), Address, Post code, Email address, Student mobile number, Notes.  **Course Schedule Details**  Course name, Course ID, Course date, Course duration, Course cost, Venue name, Venue ID, Venue address, Post code, Venue mobile number, Manager name, Venue email address, Venue cost, Google map link, Assessor name, Assessor ID, Assessor address, Post code, Assessor mobile number, Assessor email address, Student name, Student ID (auto number), Address, Post code, Email address, Student mobile number, Notes.  **Student Details**  Student name, Student ID (auto number), Address, Post code, Email address, Student mobile number, Course name, Course ID, Couse date, Achieved (Yes/No), Assessor name, Assessor ID, Assessor address, Post code, Assessor mobile number, Assessor email address, Notes.  Workplace4training receives many phone calls from students either requesting training or providing updated information, e.g. new address, change of name, etc.  The manager would like the system to generate reports. All reports should have the same format. The manager would like weekly course booking reports, broken down by course, venue, student and trainer and a report to review the trainer and courses performance, along with determining which courses are popular. Course detail reports are sent to all trainers every week by email. |
|  | | |
| **Task 1** | | **The relational database design, development and review**    It is now time to design, produce and evaluate the relational database solution and your manager has asked for a project timescale.  Your first task is to produce a user and client requirements specification that includes the purpose of the relational database system and how the system will comply with legislation requirements.  Your data structure design should include:   * data dictionaries for tables, field names, data types * data flow diagrams * entity relationship diagrams * normalisation process.   User interface designs should include:   * data entry/input (verification, validation, calculated fields, masks, directed input) * reports (queries, presentation of data, layouts) * task automation (imports, updates, deletions) * queries using multiple criteria, form values and wild cards * action and calculated queries.   You should also produce:   * a list of hardware, software and other resources required. * test plans to check correctness of data, functionality, accessibility and usability. * implementation, maintenance, and support plan including training schedule for users. * project timescale * any technical constraints on the performance of hardware/software.   Review and refine your designs against client requirements.  Email your manager to request a meeting so that you can evaluate the relational database system and discuss the timescale of the project and how you can improve the quality, effectiveness and appropriateness of the designs. Keep a record of all correspondence and meetings.  Update your design specification documentation in light of the discussions. Evaluate your designs to show how the design fulfils the manager’s requirements. You should also identify potential issues and how you would resolve them.  Develop your relational database solution, you should:   * create, setting up and maintain the data tables * create links/relationships between data tables * applying data validation rules * generate data-entry forms and sub-forms * generate queries and reports * populate the relational database * create user access levels/passwords.   You should also evidence automated functions and SQL statements that you have used to extract, manipulate and modify data.  It is now time to test the relational database system. Record the testing process. Referential integrity, functionality, security and stability testing should be considered with the use of appropriate test data, e.g. erroneous data and extreme data.  You should also test the system, gathering feedback from users and clients and make use of the testing outcomes to improve and refine the relational database solution and the process of continuous improvement during design and development stages.  In the last section of the report you should evaluate the relational database solution against:   * user and client requirements * quality of the relational database * fitness for purpose * suitability against the original requirements * legal and ethical constraints * technology constraints * strengths and alternative solutions that could be implemented * platforms and compatibility.   Evaluate your skills, knowledge and behaviour and its impact on your manager in light of:   * your time management and planning * how you used the feedback from your manager * how you behaved on the project - professionalism, etiquette, supportive of others, timely and appropriate leadership, accountability. * your recommendations and decisions * targets to obtain insights into own performance. |
| **Checklist of evidence required** | | * User and client requirements. * Design documentation:   + data dictionaries   + data flow diagrams   + entity relationship diagrams   + normalisation process * Relational database solution:   + data entry/input forms   + reports   + task automation   + queries actioned. * Hardware and software specification * Test plan and modifications * Implementation and training schedules * Project timescales * System constraints * Meeting notes * An electronic copy of the relational database, or access to the relational database * Evaluation report * Skills evaluation |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| 18/BC.D2 | Evaluate the design and optimised relational database solution against client requirements. | |
| 18/BC.D3 | Demonstrate individual responsibility, creativity, and effective self-management in the design, development and review of a relational database solution. | |
| 18/B.M2 | Justify design decisions made, showing how the design will meet client requirements. | |
| 18/C.M3 | Optimise a relational database solution to meet client requirements. | |
| 18/B.P3 | Produce a design for a relational database solution that meets client requirements. | |
| 18/B.P4 | Review the design with others to identify and inform refinements. | |
| 18/C.P5 | Produce a relational database solution to meet client requirements. | |
| 18/C.P6 | Test a relational database for functionality and performance. | |
| 18/C.P7 | Review the extent to which the relational database solution meets client requirements. | |
| **Sources of information to support you with this Assignment** | | Provides an overview of relational databases  [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** | | These records can be used to populate some of the database tables.  **Assessor details:**  Assessor ID -PH  Pol Hill  Bakery House  Bude  Cornwall  CV4 9DA  07743070505  Polhill5@gmail.com  Assessor ID – AS  Amy Snrook  22 Maryville Drive  Aldridge  West Midlands WS3 1K5  07720156999  SnrookA@Yahoo.com  Assessor ID – SA  Sid Armage  66 Gladesmore Drive  Stamford Hill  London  SW15 4AA  01217781124  Sid0@gmail.com  Assessor ID – SQ  Sonia Quilt  77 Beaucham Drive  Royal Leamington Spa Warwickshire CV9 3AB  07762287713  SoniaQuilt@yahoo.com  Assessor ID - AB  Ania Bosow  Grove Lane Cottage  Pelsall  West Midlands  WS4 2AW  07702558994  ABosow599@gmail.com  Assessor ID – AZ  Anneke Zolz  22 Hollywood Lane  Hollywood  Hendsford  Birmingham  B2 RJ2  07750066605  AnnekeandTodZolz@talk.com  **Course Details**  Course ID (102-First Aid,103- Food Safety,104- Health and Safety, 105-Fire Safety, 106-Manual Handling, 107-People Handling)  Course cost (4 hours = £55, 1 day = £95, 2 days £170)  Course duration (4 hours, 1 day, 2 days).  **Venue Details**  Venue ID - TMC  The Mountsorrel Centre  Aldridge  West Midlands WS6 2JS  Ammo Betty  07750066605  admin@themountsorrelcentre Venue ID – SPCSt Pat Centre Wood Grove Bedworth Cornwall  CV4 9DA  Joe Falksy  07759832597  admin@stpatcentre Venue ID – SSSolihull Suite Manchester House Manor Square London NW8 3QB  Paul Weale  07785364872 admin@solihullsuiteVenue ID – LCSLookley Community School Shrubland Street Royal Leamington Spa Warwickshire CV9 3AD  David Shullps  07789547779  admin@lookleycommunityschool |