BTEC Assignment Brief

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| Qualification | | Pearson BTEC Level 3 National Diploma in Information Technology Q3309 (L3EDITYr1-AR),  Pearson BTEC Level 3 National Diploma in Information Technology Q3309 (L3EDITYr1-QK) |
| Unit or Component number and title | | **Unit 4: Programming** |
| Learning aim(s)  (For NQF/RQF only) | | **B:** Design a software solution to meet client requirements  **C:** Develop a software solution to meet client requirements |
| Assignment title | | Programming Development |
| Assessor | | Mark Hepburn |
| Hand out date | | 06-03-23 |
| Hand in deadline | | 25-04-23 |
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| Vocational Scenario or Context | | You are a junior employee at a small software development company. Your company recently visited a local college and delivered a guest lecture. The college were pleased with the outcome of the visit and have asked your company to judge an upcoming tournament.  The college will be running a tournament for students, of your own design ideas, to compete in a series of events for prizes.   * Participants may enter your tournament as part of a team only * It is expected that there will be 4 teams each with 5 members * Each team will complete 5 events * The events will vary in type according to your choice of tournament type * Teams will be awarded points according to their rank within each event * The points awarded for each event are based around your own decisions, regarding how many points and how the points will be allocated to each team   You have been asked to design and develop a computer program to manage the scoring system for your tournament. |
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| Task 1 | | **What You Must Do – Design and Develop**  Produce a design for the tournament scoring system application including clear and effective diagrams, illustrations and algorithm designs. You will produce a design report in which you will:    • discuss software development life cycle stages, considering what areas of design and development should happen in which stages. You will produce an assessment of the scoring systems requirements and a design specification before any code is developed  • document the design of the system you will create, including descriptions the tasks your program needs to fulfil, algorithms your program will use, data structures and data storage needed by the system  • you should ensure that all of your diagrams and illustrations are relevant and accurately describe the programs you intend to create  • analyse the design options for the system, considering the features of the software you will create  • you should consider the advantages and drawbacks of using certain programming languages, identify any pre-defined code and assets available for use and how it could be integrated into the new system  • review your designs with others to obtain feedback and identify areas for improvement to evaluate and justify your final design  • using appropriate methods, compile a test plan with test data for the system to be tested against once development is complete.  Following the design you will develop the tournament scoring system application. You will implement the program to provide the functionality required by the college. You will produce a development report in which you will:  • demonstrate your use of a development environment and the chosen programming language, including the use of any pre-defined code and library routines within your program identifying how they improve program efficiency  • run your test plans from the design stage, ensuring that the program is thoroughly tested and that any errors found are documented with reasons why the error occurred and suggestions for repair  • repair errors found during the testing process with clear documentation for how repairs were made and results of retesting  • document errors that cannot be repaired, giving reasons why this is the case and suggest repairs for future reference  • review your program following feedback from users to identify areas for improvement and optimisation and prioritise which improvements to make with regard the time frame available to you.  • evaluate your final product covering how the decisions from all stages of the design and  development process have ensured that the computer program produced, in comparison to other possible solutions, resulted in solutions that fully meet the college's requirements and the impact these processes had on the effectiveness of the development of the final outcomes.  You also need to show how you have taken individual responsibility and effectively managed yourself while completing this assignment. For example, you need to show how you have:  • planned and managed your time and met targets.  • reviewed and responded to outcomes including the use of feedback from others  • behaved appropriately while completing the assignment – including professionalism, etiquette, supportive of others, timely and appropriate leadership, accountability and individual responsibility  • evaluated outcomes to help inform high-quality justified recommendations and decisions  • used appropriate methods of communication effectively  Checklist of evidence required. You should include:  • all of your design documents such as, diagrams, pseudo-code and illustrations.  • records of review discussions (what was discussed and what decisions were made?)  • test plans (what will be tested and how?)  • program code  • program files (your working program)  • test logs (results of your test)  • error reports (what went wrong and how it was fixed)  • optimisation logs (what was improved)  • your evaluation of the development and the completed program  • a document which demonstrates that you have shown individual responsibility and effective self-  Management ie A record of the practical activities that you carried out during this assignment and a Gantt Chart showing this activity |
| Checklist of evidence required | | You should include:   * all of your design documents such as, diagrams, pseudo-code and illustrations. * records of review discussions (what was discussed and what decisions were made?) * test plans (what will be tested and how?) * program code * program files (your working program) * test logs (results of your tests) * error reports (what went wrong and how it was fixed) * optimisation logs (what was improved) ie create before and after screenshots to show what was improved * your evaluation of the development and the completed program * a document which demonstrates that you have shown individual responsibility and effective self-management   a justification of your final design and state clearly why you think it is fit for purpose |
| Criteria covered by this task: | | |
| Unit/Criteria reference | To achieve the criteria, you must show that you are able to: | |
| 4/BC.D3 | Demonstrate individual responsibility, creativity and effective self- management in the design, development and review of the computer program | |
| 4/BC.D2 | Evaluate the final design and optimised software application against client requirements | |
| 4/B.M2 | Justify design decisions, showing how the design will result in an effective solution | |
| 4/C.M3 | Optimise the computer program to meet client requirements | |
| 4/B.P4 | Produce a design for a computer program to meet client requirements | |
| 4/B.P5 | Review the design with others to identify and inform improvements to the proposed solution | |
| 4/C.P6 | Produce a computer program that meets client requirements | |
| 4/C.P7 | Review the extent to which the final computer program meets client requirements | |

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| Sources of information to support you with this Assignment | McGrath, M., C # Programming In Easy Steps, 2nd Ed., 2020, Paperback, ISBN-13: 978-0760771389  Its Learning Its Learning | | |
| Other assessment materials attached to this Assignment Brief | *NA* | | |
| **FOR L1/2 FIRSTS ONLY:** If you have not achieved the Level 2 criteria, your work will be assessed to determine if the following Level 1 criteria have been met. | | | |
| To achieve the criteria, you must show that you are able to: | | Unit | Criterion reference |
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