**BTEC Assignment Brief**

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| **Qualification** | Pearson BTEC Higher Nationals in Digital Technologies |
| **Unit number and title** | Unit 4: Programming Lavel3 |
| **Learning aim(s)** | Learning aims  In this unit you will:   1. Examine the computational thinking skills and principles of computer programming 2. Design a software solution to meet client requirements 3. Develop a software solution to meet client requirements. |
| **Assignment title** | Programming Documentation and Behaviour |
| **Assessor** | Turdaliyev Muhammadsobir |
| **Issue date** | December 05, 2024 |
| **Hand in deadline** |  |
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| **Scenario or Context** | **Task:** Car license plate sales software  This software is used to sell and manage car license plates. License plates are purchased by users, and information about the status, price, and sellers of each license plate is stored.  1. Software Requirements:  • Manage license plates (insert, edit, delete).  • Display a list of license plates for sale.  • Manage the process of purchasing and selling license plates.  • Set the price of license plates and sales statistics.  • Store information about users who have purchased them.  **2. Software Design:**  **Database:**  1. License plate table: Information about car license plates (ID, number, price, status).  2. User table: Information about users (ID, name, address, purchased license plates).  3. Sales table: Information about sold license plates (ID, number, user ID, date).  **Basic operations:**  • Add license plate: Add a new license plate.  • View number: Show the numbers available to the user.  • Sell number: Sell purchased numbers and update information.  • View purchase history: View the numbers purchased by the user. |
| **Sources of information to support you with this Assignment** | Essential information for assignments  The recommended structure of assessment is shown in the unit summary, along with suitable forms of evidence. *Section 6 Internal assessment*, gives information on setting assignments and there is also further information on our website.  There is a maximum number of two summative assignments for this unit. The relationship of the learning aims and criteria is:  Learning aim: A (A.P1, A.P2, A.P3, A.M1, A.D1)  Learning aims: B and C (B.P4, B.P5, C.P6, C.P7, B.M2, C.M3, BC.D2, BC.D3)  Books:  Dennis, A. and Haley, W. (2009) *Systems Analysis and Design*. John Wiley & Sons Ltd.  Ferguson, J. (2014) *BDD in Action: Behavior-driven development for the whole software lifecycle*. Manning.  Lejk, M. and Deeks, D. (2002) *An Introduction to System Analysis Techniques*. 2nd Ed. Addison-Wesley.  Murch, R. (2012) *The Software Development Lifecycle: A Complete Guide*. Kindle. |

**Summary of unit**

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| Learning aim | Key content areas | Assessment approach |
| A Examine the computational thinking skills and principles of computer programming | A1 Computational thinking skills  A2 Uses of software applications |  |
|  | A3 Features and characteristics of programming languages  A4 Constructs and techniques and their implementation in different languages  A5 Principles of logic applied to program design | A report evaluating computational thinking skills and how the principles of software design and computer programming are applied to create effective, high- quality software applications. |
|  | A6 Quality of software applications |  |
| B Design a software solution to meet client requirements | B1 Software development life cycle  B2 Software solutions design | A project brief identifying the scope of the problem and user/client requirements.  Design documentation for the suggested solution.  User feedback and design refinement documentation.  Development and support documentation, including development and testing logs, meeting notes and  a report that evaluates the outcomes and development of  the project. |
| C Develop a software solution to meet client requirements | C1 Software solutions development  C2 Testing software solutions |
|  | C3 Improvement, refinement and optimisation of software applications |
|  | C4 Review of software solutions |
|  | C5 Skills, knowledge and behaviours |

## Assessment criteria

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| Pass | Merit | Distinction |
| Learning aim A: Examine the computational thinking skills and principles of computer programming | | A.D1 Evaluate how  computational thinking skills can impact software design and the quality of the software applications produced. |
| A.P1 Explain how  computational thinking skills are applied in finding solutions that can be interpreted into  software applications.  A.P2 Explain how  principles of computer programming are applied in different languages to produce software applications.  A.P3 Explain how the principles of software design are used to produce high-quality software applications that meet the needs of users. | A.M1 Analyse how  computational thinking skills can impact software design and the quality of the software applications produced. |
| Learning aim B: Design a software solution to meet client requirements | | BC.D2 Evaluate the  design and optimised computer program against client requirements.  BC.D3 Demonstrate  individual responsibility, creativity and effective  self-management in the design, development and review of the computer program. |
| B.P4 Produce a design for a computer program to meet client requirements.  B.P5 Review the design with others to identify and inform improvements  to the proposed solution. | B.M2 Justify design  decisions, showing how the design will result in an effective solution. |
| Learning aim C: Develop a software solution to meet client requirements | |
| C.P6 Produce a computer program that meets client requirements.  C.P7 Review the extent to which the computer program meets client requirements. | C.M3 Optimise the  computer program to meet client requirements. |