# Assignment Brief 02 (RQF)

## Higher National Certificate/Diploma in Business

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| **Student Name/ID Number:** |  |
| **Unit Number and Title:** | **Unit 09: Software Development Life Cycle** |
| **Academic Year:** |  |
| **Unit Assessor:** |  |
| **Assignment Title:** | **Undertake a software development life cycle** |
| **Issue Date:** | **07/12/2020** |
| **Submission Date:** |  |
| **Internal Verifier Name:** |  |
| **Date:** |  |

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| **Submission Format:** |
| *Format:*   * The submission is in the form of 1 document. * You must use the Times font with 12pt size, turn on page numbering; set line spacing to 1.3 and margins to be as follows: left = 1.25cm, right = 1cm, top = 1cm, bottom = 1cm. Citation and references must follow the Harvard referencing style.   *Submission:*   * Students are compulsory to submit the assignment in due date and in a way requested by the Tutor. * The form of submission will be a soft copy posted on <http://cms.greenwich.edu.vn/>. * Remember to convert the word file into **PDF** file before the submission on CMS.   *Note:*   * The individual Assignment must be your own work, and not copied by or from another student. * If you use ideas, quotes or data (such as diagrams) from books, journals or other sources, you must reference your sources, using the Harvard style. * Make sure that you understand and follow the guidelines to avoid plagiarism. Failure to comply this requirement will result in a failed assignment. |
| **Unit Learning Outcomes:** |
| **LO3** Undertake a software development lifecycle.  **LO4** Discuss the suitability of software behavioural design techniques. |
| **Assignment Brief and Guidance:** |
| **Tasks**  At this stage, you have convinced Tune Source to select your project for development. Complete the following tasks to analyse and design the software.  **Task 1 – Analysis (1)**   1. Identify the stakeholders, their roles and interests in the case study. **P5**   Review the requirement definition of the project. Clearly indicate which stakeholder(s) provide what requirements.  *Word limit: 150 – 200.*  Identify FRs and NFRs of Tune Source Project.  Discuss the relationships between the FRs and NFRs.  *Word limit: 300 – 400 words.*   1. Discuss the technique(s) you would use to obtain the requirements. **P5**   If needed, you may state suitable additional assumptions about the project in order to justify the technique(s) that you choose.  *Techniques: JAD, Interview, Observation, etc.*  *Demonstrate how to collect requirements based on chosen technique.*  *Word limit: 700 – 1000.*   1. Discuss how you would trace these requirements throughout the project by using Requirement Traceability matrix. You will have to provide real usage of it. **M3**   *Word limit: 400 – 500 words.*  **Task 2 – Analysis (2)**  Analyze the requirements that you identified in Task 1 using a combination of structural and behavioral modelling techniques that you have learnt. **P6**  *Scope:* You only need to construct following items for the system. You will have to include:   * + Use Case Diagram for the whole system.   + Use Case specification for 2 Use cases.   + Context Diagram for the whole system.   + Data Flow Diagram – Level 0 for the whole system.   + ERD for the whole system.   For each diagram, you will have to explain properly.  *Word limit: 1000 – 1200 words.*  **Task 3** **– Design**  Based on the analysis result, discuss how you would conduct the design phase:   1. Discuss how the user and software requirements are addressed in the design phase. **P7**    * You will explain how Mock-up, and Wireframe are used in the project. You should include some of the mockup or wireframe (at least 5) design of the Tune Source project to justify that it matches users’ requirements.    * You will explain which architecture (client – server, n-tier, microservices, etc.) is suitable for the project with clear illustrations and why.    * Then you will address which technical solution stack could be suitable to implement the project with clear explanations. 2. Discuss how activity diagram and pseudocode are used to specify the software behaviour. 3. Discuss how UML state machine can be used to specify the software behaviour. Differentiate between FSM and extended FSM using the case study. 4. Discuss how the data-driven approach improves the reliability and effectiveness of software.   *Word limit: 800 – 1500.*  **Task 4 – Software quality management**   1. Discuss two software quality attributes that are applicable to the project. 2. Discuss two quality assurance techniques that can help improve the software quality in the project. 3. Discuss how the design techniques and approaches that you have used can help improve the software quality.   *Word limit: 400 – 1500.* |

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| **Learning Outcomes and Assessment Criteria (Assignment 02):** | | | |
| Learning Outcome | Pass | Merit | Distinction |
| **LO3** Undertake a software development lifecycle | **P5** Undertake a software investigation to meet a business need.  **P6** Use appropriate software analysis tools/techniques to carry out a software investigation and create supporting documentation. | **M3** Analyse how software requirements can be traced throughout the software lifecycle.  **M4** Discuss two approaches to improving software quality. | **D3** Critically evaluate how the use of the function design paradigm in the software development lifecycle can improve software quality. |
| **LO4** Discuss the suitability of software behavioural design techniques | **P7** Explain how user and software requirements have been addressed. | **M5** Suggest two software behavioural specification methods and illustrate their use with an example.  **M6** Differentiate between a finite state machine (FSM) and an extended-FSM, providing an application for both. | **D4** Present justifications of how data driven software can improve the reliability and effectiveness of software. |