**ASSIGNMENT 1 BRIEF**

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| **Qualification** | **BTEC Level 5 HND Diploma in Business** | | |
| **Unit number** | Unit 20: Advanced Programming | | |
| **Assignment title** | Examine and design solutions with OOP and Design Patterns | | |
| **Academic Year** |  | | |
| **Unit Tutor** |  | | |
| **Issue date** |  | **Submission date** |  |
| **IV name and date** |  | | |

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| **Submission Format:** |
| *Format:* The submission is in the form of a **group written report and presentation**. This should be written in a concise, formal business style using single spacing and font size 12. You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and referenced using the Harvard referencing system. Please also provide a bibliography using the Harvard referencing system.  *Submission* Students are compulsory to submit the assignment in due date and in a way requested by the Tutors. The form of submission will be a soft copy in PDF posted on corresponding course of <http://cms.greenwich.edu.vn/>  *Note:* The Assignment *must* be your own work, and not copied by or from another student or from  books etc. 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 know how to reference properly, and that understand the guidelines on plagiarism. *If you do not, you definitely get fail* |
| **Assignment Brief and Guidance:** |
| **Scenario**: You have recently joined a software development company to help improve their documentation of their in-houses software libraries which were developed with very poor documentation. As a result, it has been very difficult for the company to utilise their code in multiple projects due to poor documentation. Your role is to alleviate this situation by showing the efficient of UML diagrams in OOAD and Design Patterns in usages.  **Tasks**  You and your team need to explain characteristics of Object-oriented programming paradigm by applying Object-oriented analysis and design on a given (assumed) scenario. The scenario can be small but should be able to presents various characteristics of OOP (such as: encapsulation, inheritance, polymorphism, override, overload, etc.).  The second task is to introduce some design patterns (including 3 types: creational, structural and behavioral) to audience by giving real case scenarios, corresponding patterns illustrated by UML class diagrams.  To summarize, you should analyze the relationship between the object-orientated paradigm and design patterns.  The presentation should be about approximately 20-30 minutes and it should be summarized of the team report. |

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| **Learning Outcomes and Assessment Criteria** | | |
| **Pass** | **Merit** | **Distinction** |
| **LO1** Examine the key components related to the object-orientated programming paradigm, analysing design pattern types | | |
| **P1** Examine the characteristics of the object-orientated paradigm as well as the various class relationships. | **M1** Determine a design pattern from each of the creational, structural and behavioural pattern types. | **D1** Analyse the relationship between the object-orientated paradigm and design patterns. |
| **LO2** Design a series of UML class diagrams | | |
| **P2** Design and build class diagrams using a UML tool. | **M2** Define class diagrams for specific design patterns using a UML tool. | **D2** Define/refine class diagrams derived from a given code scenario using a UML tool. |