**Higher Nationals** 



**Assignment Brief – BTEC (RQF)**

Higher National Diploma in Computing

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| **Unit Number and Title** | Unit 01: Programming |
| **Academic Year** | 2024 - 2025 |
| **Unit Tutor** | Nguyen Van Huy |
| **Assignment Title** | Employee management software |
| **Issue Date** | 07/20/2024 |
| **Submission Date** | 07/20/2024 |
| **IV Name & Date** | Nguyen Ngoc Tan - 07/20/2024 |

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| **Submission Format** |
| * The submission is in the form of an individual written report. * 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. * Please provide a referencing list using the Harvard referencing system. * The recommended word limit is minimum 2000 words. |
| **Learning Outcomes** |
| **LO1** Define Basic algorithms to carry out an operation and outline the process of programming an application.  **LO2** Explain the characteristics of procedural, object orientated and event-driven programming.  **LO3** Implement basic algorithms in code using an IDE  **LO4** Determine the debugging process and explain the importance of a coding standard. |
| **Assignment Brief and Guidance** |
| You are a junior employee at a small software development company. Your company has been invited by a local college to give a guest lecture on programming.  Your supervisor has provided you with a portfolio of computer programs and has asked you to research the programs with regard to the concepts used to create a knowledge base and prepare for the visit.  Review the computer programs you have been provided with and conduct research into programming languages and how programming principles have been applied to produce effective applications.  You will research principles of programming and:   * Define the algorithm and outline the process of building an application using flowcharts or pseudocode, while clarifying the relationship between algorithms and code. * Explore the features and characteristics of programming languages, to explain the use of different types of programming language, what particular problems each programming language discussed can be used to solve, giving a comparison of those programming languages * How to identify the steps to build an application from coding to execution. * Evaluate the use of an IDE for application development, program debugging, and compare it with not using an IDE. * Evaluate how design and implementation of a software application can affect its quality. * Understand coding standards and their benefits when writing code.   Next, to prepare for the practical session, you are also assigned to write a small module of Employee management software for a company. The software requires you to manage employee information, where each employee in the company includes details such as ID, Employee Code, First Name, Last Name, Gender, Address, Email, Department, Date of Birth, Status (Working | Resigned), salary coefficient, and basic salary.  The software must have at least two main menus:   * . Employee information management:   + Show all employees.   + Add a new employee.   + Update/Modify employee information based on the employee code.   + Delete an employee by employee code.   + View employee by employee code. * Function   + Display a list of employees based on the selected department.   + Display a list of employees with the status “Working”.   + Display a list of employees with the status “Resigned”.   + Display a list of employees with total income in ascending order. Hint: The total income is calculated as “the basic salary” multiplied by “the salary coefficient”.   + Display a list of employees with a basic salary greater than $3000   After you develop the software, you should explain both troubleshooting process and troubleshooting support infrastructures available in the IDE you have chosen for software development.  The article is made as a document/file:   * Document Report. * The version of your installing and executive application. |
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