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| **ASSIGNMENT FORM** | | | | | | | | **Logo** | | | |
| **Course/Programme:** | | L3 Extended Diploma in IT | | | | | | **Course Code: 1190** | | | |
| **Unit Title:** | Software Design and Development | | | | | | | **Unit Number: 6** | | | |
| **Module Tutor:** | Paula Avey | | | | | **Course Director:** | | Lar-Mikael Wiksten | | | |
| **Assignment Title/Description:** | | | | | Programming Languages and Paradigms | | | **Assignment No:** | | | 1 of 3 |
| Date Issued: | | | | 05/10/2020 | | | | | | | |
| Final Deadline: | | | | 22/10/2020 | | | | | | | |
| Learning Aims Covered: 1. Know the Features of Programming Languages | | | | | | | | | | | |
| **STUDENT NAME:** | | |  | | | | | | | | |
| **I certify that this assignment is my own original work and that any material taken from another person, from a book or from the Internet has been acknowledged and its source identified. I have worked independently to produce and prepare the evidence for this assignment.** | | | | | | | | | | | |
| **Student Signature** | | |  | | | | **Date:** | | |  | |
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| **This assignment has been internally verified against the BTEC unit Specification by**: | | | | | | | | | *Signed:* | | | |

**Criteria Achieved:**

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| **To achieve the criteria you must show that you are able to:** | **Unit** | **Criterion Reference** | **Tutor Signature** |
| Describe the application and limits of procedural, object oriented and event driven programming paradigms | 6 | P1 |  |
| Describe the factors influencing the choice of programming language | 6 | P2 |  |
| Explain sequence, selection and iteration as used in computer programming | 6 | P3 |  |
| Outline the benefits of having a variety of data types available to the  programmer. | 6 | P4 |  |

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| Date Achieved |  | Tutor Name |  | Tutor Signature |  |

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| **Scenario:**  Your employer, SoftSolutions Ltd, have asked you, the supervisor for the software developers, to lead a session on programming languages for a group of trainee software developers. You are required to produce suitable material / resources that provides detail on:   * The 3 main programming paradigms (procedural, event driven and object oriented) * Supporting tools for developers (Case Tools and IDE) * The types of languages, their uses and suitabilities (i.e. where used and why) * Programming Features * Data types * Software Structures | | |
| **Task 1 : Programming Paradigms, Supporting Developer Tools, and Programming Languages**  Produce a Powerpoint presentation (with supporting notes) on the 3 programming paradigms (Procedural, Event Driven and Object Oriented), Support Tools and Environments, and Programming Language Suitability.  For each paradigm, you must include:   * At least 3 facts / characteristics / features * An example language, application (use of) and reason for their use   The section on Support Development Tools must include a description of the features of Case Tools and IDEs.  In the final part of the presentation you will describe the factors that influence the choice of programming language. You should support each of the factors with reasoning and/or examples. | | |
| **Evidence you must produce for this task:**  Powerpoint presentation with appropriate diagrams, tables and supporting notes. | | |
| **Criteria covered by this task:** | | |
| **To achieve the criteria you must show that you are able to:** | **Unit** | **Criterion Reference** |
| Describe the application and limits of procedural, object oriented and event driven programming paradigms | 6 | P1 |
| Describe the factors influencing the choice of programming language | 6 | P2 |

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| **Task 2 : Data Types and Software Structures**  Produce a learning resource / class handout that:  Explain what variables are, how they are used in C# code (declared, assigned, manipulated, displayed) and why they are useful. You should include some different data types in your explanation and then go onto to detail the advantages (benefits) of having a variety of data types. You should include a table / list of the C# data types (range and memory requirements) as a reference.  Explain (with flowcharts or node-graphs, pseudocode, code snippets and execution screen-prints) the following software structures:   * sequence * selection * iteration | | |
| **Evidence you must produce for this task:**  Class handout supported by tables, flowcharts/graphs, code snippets (suitably annotated) and execution screen-prints. | | |
| **Criteria covered by this task:** | | |
| **To achieve the criteria you must show that you are able to:** | **Unit** | **Criterion Reference** |
| Outline the benefits of having a variety of data types available to the programmer. | 6 | P4 |
| Explain sequence, selection and iteration as used in computer programming | 6 | P3 |

**Sources of information:**

<http://learn.cwa.ac.uk>

internet searches

- C# tutorials

- Programming paradigms

- Case Tools

- IDE