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| **BTEC Level 3 Certificate and Diploma in ICT Systems and Principles**  |
| **Assessment Title: Design a paint calculator**  |
| Assessor: Bob Higgie | Student: | Course code:  |
| Unit Number: 51 | Unit Title: Software Design Fundamentals | Assessment Code: U51.02 |
| Hand out Date :15/02/17 | Hand in date: 17/02/17 | Date handed in: |

**Individual Target:**2.1

Develop algorithms to represent problems

2.2

Identify and define data and file storage requirements including predefined data items

2.3

Identify and define program structures including predefined code items

2.4

Identify and represent required inputs and outputs

2.5

Use tools (eg Pseudo code) to express software designs

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| **Actual Grade** | **Grading criteria**  | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| **Achieved?** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Please note that the grade that you have been awarded is subject to confirmation by the awarding body.

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| **Scenario**After a meeting with the owner of the decorating company you now know what the program should achieve: Calculate the cost for the room to be painted (including and excluding VAT):Prepare an itemised invoiceRequired information* Type of paint and coverage
* Dimensions of walls and windows
* Cost of paint
* Customer address

**Task 1 (Criteria 2.1 and 2.5)**Develop algorithms using pseudocode to describe how the following should be done: * Calculate the areas of walls and windows to be painted
* Calculate the amounts of paint required
* Calculate the costs and VAT

You must fully annotate your algorithms explaining how they work and how they would meet the above requirements.**Task 2 (Criteria 2.2 and 2.3)**Produce a table that shows your chosen data types, predefined data and structures within your program. (Include correct naming, variables, selection, loops and functions). You should include a column which justifies why you are using that data type in the specific context. Example:

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| **Control** | **Variable** | **Data type** | **Description** |
| Variable | strSurname | string | Holds customer’s surname |
| Variable | sngPrice | decimal | Holds price of an item  |
| Variable | sngTotalCost | decimal | Holds the total cost of an order |
| Function | vat | decimal | Will return a number after doing a calculation |

**Task 3 (Criteria 2.4)**Using appropriate tools produce design documentation showing how the required functionality is constructed. Your diagrams should show inputs, outputs and processes within your designed program.You should have a wire frame UI design, a structure diagram and a flow chart. |

**What to hand in:**

Task One **–** Annotated algorithms in pseudocode

Task Two – A table

Task Three – Annotated diagrams

**How to hand in your assessment**

This assessment must be uploaded onto the VLE by the hand in date on the front of the assignment brief.

If you have a valid reason why you will not be able to hand in the work on time (up to 3 days later), you will need to fill out and hand in an AE1. If you need to ask for a longer extension you will need to fill out and hand in an AE to your Head of School at least two days before the assessment deadline.

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| **Student declaration:**By uploading my work to the VLE I declare that:* I have read the Assignment Submission Procedure.
* I agree that this is my own work or my own work and that of other members of my group. It has not been copied (plagiarised) from any other source e.g. the internet, a book, another student or group of students.
* I know that I may FAIL this assignment if my Head of School proves that this is not my own work.
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For staff use only.

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| **Internal Verification** | This assessment has been verified and form IV8 completed: | IV name: | IV signature: | Date: |