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|  | **FACULTY OF COMPUTING, ENGINEERING and SCIENCE** | Final mark awarded:\_\_\_\_\_ |

**Assessment Cover Sheet and Feedback Form 2024/25**

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| **Module Code:**  IS3S662 | **Module Title:**  Advanced Databases and Modelling | | | **Module Lecturer:**  Robert Berry |
| **Assessment Title and Tasks:**  Build U Like Class Diagram | | | | **Assessment No.**  1 of 2 |
| **No. of pages submitted in total including this page:** Completed by student | | | | **Word Count of submission**  **(if applicable**): Completed by student |
| **Date Set:**  13th September 2024 | | **Submission Date:**  **15th November 2024** | | **Return Date:**  16th December 2024 |
| ***Part A: Record of Submission (to be completed by Student)*** | | | | |
| **Extenuating Circumstances**  If there are any exceptional circumstances that may have affected your ability to undertake or submit this assignment, make sure you contact the Advice Centre on your campus prior to your submission deadline. | | | | |
| **Fit to sit policy**:  The University operates a fit to sit policy whereby you, in submitting or presenting yourself for an assessment, are declaring that you are fit to sit the assessment. You cannot subsequently claim that your performance in this assessment was affected by extenuating factors. | | | | |
| **Plagiarism and Unfair Practice Declaration:**  By submitting this assessment, you declare that it is your own work and that the sources of information and material you have used (including the internet) have been fully identified and properly acknowledged as required[[1]](#footnote-2). Additionally, the work presented has not been submitted for any other assessment. You also understand that the Faculty reserves the right to investigate allegations of plagiarism or unfair practice which, if proven, could result in a fail in this assessment and may affect your progress. | | | | |
| **Details of Submission:**  Note that all work handed in after the submission date and within 5 working days will be capped at 40%[[2]](#footnote-3). No marks will be awarded if the assessment is submitted after the late submission date unless extenuating circumstances are applied for and accepted (Advice Centre to be consulted).  **Work should be submitted to Blackboard on the submission date above.** | | | | |
| **You are required to acknowledge that you have read the above statements by writing your student number (s) in the box:** | | | Student Number(s): | |

**IT IS YOUR RESPONSIBILITY TO KEEP A RECORD OF ALL WORK SUBMITTED**

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| **Part B: Marking and Assessment**  **(to be completed by Module Lecturer)** |
| This assignment will be marked out of 100%  This assignment contributes to 30% of the total module marks. |
| **Assessment Task:**  You are required to produce a class diagram for the company.  Where necessary, the diagram should be amplified with some words of explanation, particularly relating to constraints and assumptions made. To avoid cluttering the diagram, the class diagram should not contain attributes and operations. Rather you should, for each class, list separately likely attributes and operations. It is not necessary to list the attribute accessor operations (get & set methods). **The class diagram should be inserted into a Word document.** You can use any software of your choosing to produce the class diagram – they should not be hand-drawn.  Be careful to remain within the stated limited scope of the assignment.  Class model:  You should provide an analysis/design model showing:-  all the relationships between the classes including inheritance, aggregation, composition and other associations where relevant.  Name the associations and show the multiplicity.  Detail the important attributes and operations for the classes. |
| **Learning Outcomes to be assessed** (as specified in the validated module descriptor <https://curriculum.southwales.ac.uk/> ):  To analyse the requirements and design an appropriate solution for a problem of defined scope using advanced design/modelling techniques.   |  |  |  | | --- | --- | --- | | **Marking Scheme** | **Marks Available** | **Marks Awarded** | | Class diagram | 60 |  | | Class attributes | 12 |  | | Class operations | 18 |  | | Assumptions | 10 |  | | **Total** | 100 |  | |  |  |  | |

**Appendix A**

Build U Like are a building company specialising in hard landscaping. They lay patios, build walls, lay drives etc. for their customers. A customer will remain in the system even though they may not have any current or future building project(s) with the company. Each building project will consist of two parts: Material and Labour.

The material used by the company is supplied by a number of suppliers and each supplier can supply a number of different materials to the company.

The company keeps, on site, a certain quantity of all materials it uses and places an order with a supplier when the quantity in stock falls below a specified level. For simplicity, assume that there will always be an adequate quantity in stock for all projects and you need not take into account exceptional orders. In addition, assume that the material estimated as being used at the start of each project will be equal to the actual material used during the project.

Each project will be allocated one project supervisor and a number of staff who will be scheduled before the project starts. The allocation of the staff will depend on their area(s) and level of building expertise. A member of staff may be allocated to many different tasks on various projects. A member of staff may be scheduled for the same project more than once (scheduled for more than one task).

**Task Allocation list for Project A:**

**Supervisor:** ST7 Fred Bloggs

**Staff member Date Duration Task**

ST1 L.Jones 10/11/24 14 hours Laying Drive at front of property

ST2 L. Morgan 10/11/24 14 hours Laying Drive at front of property

ST3 B. Smith 12/11/24 7 hours Excavating area at rear of Property

ST4 G. Samuel 12/11/24 7 hours Excavating area at rear of

Property

ST1 L. Jones 12/11/24 21 hours Laying Patio at rear of property

ST2 L. Morgan 12/11/24 21 hours Laying Patio at rear of property

For simplicity, ignore the British weather and assume that the original schedule will always be adhered to. In addition, assume that staff will never need to be reassigned or rescheduled (no illnesses, unforeseen circumstances etc.).

For each task we need to record the amount of the material used in the task. A task may need a number of different materials; hardcore, patio slabs, cement etc and the amount of material to be used needs to be recorded. Again, for simplicity, assume that the amount assigned will always be the amount used. In addition, the labour hours spent on each task by each member of staff also needs to be recorded.

Each project is ‘costed’ (priced) by the company in a very simplistic manner.

For each task:

(Material Used \* Cost) + (Hours Worked\*Labour rate of Staff member)

The above describes ‘in-house’ tasks. Some projects may require specialist tasks that are ‘bought in’ to the project (fountains, ponds etc.). These tasks still need to be scheduled, but the total cost is calculated by the specialist (who also provides all necessary materials for the task). A list of specialists is kept by the company together with details of their expertise.

**Appendix B**

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| **Criteria** | **Fail (< 40)** | **Pass (40 – 49)** | **Pass (50 – 59)** | **Merit (60 – 69)** | **Distinction (70 +)** |
| Class Diagram  /60 | Class model severely deficient in entity classes.  Multiplicities incorrect on most relationships. | Reasonably sound class model with some omissions and errors.  Multiplicities incorrect on many relationships. | Good class model with most appropriate classes, associations and multiplicities. | Good class model with most appropriate classes, associations and multiplicities. | Very good class diagram with most/all appropriate classes, associations and multiplicities. |
| Attributes /12 | Class model severely deficient in attributes. | Some attributes identified | A good representative set of attributes identified. | A good representative set of attributes identified. | A very good representative set of attributes for the classes. |
| Operations /18 | Class model severely deficient in operations. | Some operations identified | A good representative set of operations identified. | A good representative set operations identified. | A very good representative set of operations for the classes. |
| Assumptions  /10 | Few or no assumptions that demonstrate a lack of understanding of the scenario and real world issues. | Some assumptions that demonstrate a reasonable understanding of the scenario and real world issues. | Some reasonable assumptions made. | Clearly documented assumptions that demonstrate a good understanding of the scenario and real world issues. | Clearly documented assumptions that demonstrate a very good understanding of the scenario and real world issues. |

1. University Academic Integrity Regulations [↑](#footnote-ref-2)
2. Information on exclusions to this rule is available from Campus Advice Shops [↑](#footnote-ref-3)