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|  | Faculty of Computing, Engineering and Science |  |

**Assessment Cover Sheet and Feedback Form** 2020-21

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| Module Code:  IS4S761 | Module Title:  Principles of Computing | | Module Team:  Gaylor Boobyer |
| Assessment Title and Tasks:  Portfolio 1 Element 2 | | | Assessment No.  2 |
| Date Set:  **13-Nov-20** | | Submission Date:  **11-Dec-20** | Return Date:  **22-Jan-21** |

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| ***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-1). 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-2). 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 but this will be treated as your submission receipt and you need to provide one printed copy on Monday 10th December 2018 before noon.**  You are responsible for checking the method of submission. This is an INDIVIDUAL coursework. | |
| **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 RECORDS OF ALL WORK SUBMITTED**

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| **Marking and Assessment** |
| This is an INDIVIDUAL coursework.  This assignment will be marked out of 100%  This assignment contributes to 25% of the total module marks.  **Assessment Task:**  Using the given ERD, analyse the requirements and then:  a) Produce the table definitions (in **SQL**) for the following tables:  (Refer to the later queries in order to determine sensible attributes for each of  these tables.)   * Centre * Salesperson * Car for Sale * Customer   Remember to define a primary key and foreign key(s) where necessary.  (Hint: Refer to ERD already given for most of these)      b) Populate your tables with **sensible** data.  (Remember you have to use this data in order to satisfy the following queries.)  List the data contained in each of these tables.    c) Write the SQL statements necessary to satisfy the following queries. Remember to use sensible headings where appropriate:    1. Produce a list of customers in customer number order.  **(2 marks)**  2. Produce a list of sales staff ordered by centre number then salesperson number. (This should be one query only)  **(3 marks)**  3. Produce a list of car sales ordered by salesperson number then car price. (This should be one query only)  **(4 marks)**  4. Produce output which lists which outputs the number of cars sold by each salesperson for the past 6 months (I.e. S1: 5 cars ,  S2: 3 cars etc.)  **(7 marks)**  5(a). Produce output which lists of the total cost of the cars sold by each salesman in the past month.  For example: S1 has sold CA12 JKN £ 8,500  CF59 JMK £10,100    therefore the output would be S1 18,600.  **(7 marks)**  5(b). For four extra marks, add the commission earned by each salesman to the above report.  **(4 marks)**  6. Produce output which lists details of the most expensive car sold in the past month.  **(7 marks)**  7. Produce output which lists of all car sales in the past month. Include salesperson number, salesperson name, customer number, customer name and customer address in your output. Order by salesperson number.  **(9 marks)**  8. Produce a list of customersthat do not currently have any car sales in the car sale table. (Make sure that your data contains customers without any current car sales)  **(7 marks)**  **Up to 10 extra marks are available for answers to the above queries that are exceptional.** |

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| **Learning Outcomes to be assessed** (as specified in the validated module descriptor [https://icis.southwales.ac.uk/](https://icis.southwales.ac.uk/studentmodules/13802/studentmodulespecifications) ):  1) To demonstrate a practical understanding of the design of information systems.  2) To design and implement a database system that meets a set of requirements and avoids data redundancy. |
| |  |  |  | | --- | --- | --- | | **Marking Scheme** | **Marks Available** | **Marks Awarded** | | Table definitions in SQL (DDL) | 35 |  | | Sensible table population | 5 |  | | Specified SQL statements (DML) | 50 |  | | Exceptional elegance of SQL queries | 10 |  | | **Total** | 100 |  | |

**Appendix A**

**Glam Cars**

Glam Cars is an organisation that consists of a number of centres that both sells and hires cars to customers. A car is either available for hire or is for sale. It cannot be both.

**Car Sales**

Each centre will employ a number of sales staff. Sales staff are employed at one centre only.

Each car sale for the previous 6 months is recorded and after 6 months is automatically archived. (You need not consider the archiving of car sales for this coursework). For each sale, made by a salesperson, they will earn a commission based on the following table:

**Car Price(£) % Commission**

0-5000 2

5000-10000 3

10000-15000 4

15000+ 5

For simplicity, assume that the car is always sold for the price specified in the car details table.

You will need to record this commission rate somewhere within your database – either as an attribute in a table, or as a separate table.

Customer details are retained for marketing purposes even if they have not purchased a car recently. Some customers will not purchase a car outright, but will make an agreement to pay a deposit and pay the balance over the next two years. The recording of deposits and payments is outside the remit of this database system, but customers who have broken their agreements will need to be recorded on the system as ‘bad debtors’ until they pay in full.

**Car Hire**

Whilst most hire contracts are for one car only, some hire contracts can be for one or more cars.

A record is kept of past, current and future hire contracts. Past hire contract details are kept for 6 months and then archived. (You need not consider the archiving of hire contracts for this coursework).

Details of all customers, past and present, are kept. Whilst most customers will pay in full for a car hire before being allowed to take a car, there are some regular customers that can arrange a car hire and subsequently be sent an invoice to be paid by a specified date.

**Glam Cars continued.**

If the outstanding sum is not paid by this date, then the customer is classed as a ‘bad debtor’ and not allowed to hire any more cars until the debt is paid. In addition, some customers may incur an additional charge if they exceed the set mileage specified in the hire contract (I.e. 2,000 miles allowed but 2,100 miles actually travelled). Once more, if the customer refuses to pay this additional charge, he/she will be classed as a ‘bad debtor’ and not allowed to hire any more cars until the debt is paid.

Hire cars will need to be serviced and/or repaired and Glam Cars have a number of garages under contract that any hire car can be sent to for service/repair. A record needs to be retained that details where and when a service/repair takes place.

**Appendix B**

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**Partial ERD for Glam Cars**

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0..\*

1..\*

0..\*

Centre

Customer

Car Sale

Salesman

1..1

# Marking Scheme:

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|  | Fail | Narrow Fail | 3rd Class / Pass | Lower 2nd Class / Pass | Upper 2nd Class / Merit | 1st Class / Distinction |
| Table definitions in SQL (DDL) 35% | * Relations/Tables missing.Primary keys, foreign keys and not null/null used incorrectly in most instances | * Relations/Tables missing.Primary keys, foreign keys and not null/null used incorrectly in most instances | * No Relations/Tables missing.Primary keys, foreign keys and not null/null used incorrectly in many instances | * No Relations/Tables missing.Primary keys, foreign keys and not null/null used incorrectly in some instances | * No Relations/Tables missing.Primary keys, foreign keys and not null/null used correctly in many instances | * No Relations/Tables missing.Primary keys, foreign keys and not null/null used correctly in most/all instances |
| Sensible Table Population 5% | * None/some tables populated with no/some data. Data inadequate to perform later queries | * None/some tables populated with no/some data. Data inadequate to perform later queries | * All tables populated with some data. Data mostly adequate to perform later queries | * All tables populated with a reasonable amount of data. Data suitable to perform later queries | * All tables populated with a good amount of data. Data suitable to perform later queries. Most table data size relates to expected table size based on the relationship between tables | * All tables populated with a good amount of data. Data suitable to perform later queries All table data size relates to expected table size based on the relationship between tables |
| SQL DML statements 50% | * Most SQL statements do not meet the information retrieval requirements detailed in the scenario | * Many SQL statements that do not meet the information retrieval requirements detailed in the scenario | * SQL statements that meet some of the information retrieval requirements detailed in the scenario | * Some SQL statements that do not meet the information retrieval requirements detailed in the scenario | * SQL statements that meet many of the information retrieval requirements detailed in the scenario | * SQL statements that meet all of the information retrieval requirements detailed in the scenario |
| Exceptional elegance of SQL queries 10% | * No attempt at SQL statements that produce innovative/ exceptional code | * Very little attempt at SQL statements that produce innovative/ exceptional code | * Little attempt at SQL statements that produce innovative/ exceptional code | * Some attempt at SQL statements that produce innovative/ exceptional code | * Some very good attempts at SQL statements that produce innovative/ exceptional code | * Excellent attempt at SQL statements that produce innovative/ exceptional code |
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1. University Academic Integrity Regulations [↑](#footnote-ref-1)
2. Information on exclusions to this rule is availablefrom Campus Advice Shops [↑](#footnote-ref-2)