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| OVERVIEW This first part of the project will require the completion of a database design for a given case study. It will require you to undertake logical and physical data modelling making appropriate decisions about the database design based on a case study specification you have been provided with. The second part of the project will require that you build a physical database in Oracle that implements the design you have developed, populate this with data and then build some more complex queries.  Please read the details of the assignment carefully and ensure you understand what is required both in terms of content and in terms of submission. Please use your lab classes to get assistance with this assignment and to complete as much of it as possible. |
| DUE DATE/TIME **Tuesday 7th December 2021 23:59** |
| MARKS ACHIEVABLE This assignment requires the submission of 3 (three) files:   1. The document describing the database and containing the data modelling screenshots, will be completed in two parts each of which will be marked out of 100. You will also receive an overall total mark. 2. The Data Definition File (.sql) 3. The Data Manipulation File (.sql)   The overall mark you receive will be weighted in the calculation of your final CA mark to reflect that overall it counts for 30% of the CA of the module. |

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| NOTES  1. Unfair practice is a very serious offence TU Dublin and you must acknowledge any material used by including a referenced bibliography in your report. Any issues will be investigated and those considered serious will be handled via the DIT Plagiarism policy (details are available in the General Assessment Regulations). 2. Assignments must be submitted via Brightspace through the assignment section. Email submissions will be ignored. 3. Extensions due to acceptable personal circumstances must be requested by email in advance of the deadline. 4. For late submissions (i.e. without an agreed extension), a penalty of 5% will be applied for every day a submission is late. 5. No submissions will be accepted after Tuesday December 14th 2021 @ 23:59 unless an extension has been agreed. **Anything submitted later than this date without agreement will be ignored.** 6. Assignments which do not adhere to the requirements or which are submitted incorrectly will attract a penalty of up to 5% (e.g. incorrectly named submissions, omitting student details from model/sql file). 7. Email submissions will not be accepted. |

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| REQUIREMENTS FOR SQL  1. You need to generate statements to create the tables from your physical model.    * Table, attribute and constraints need to match your model (including naming).    * You can generate this using data modeller. 2. You need to generate data to populate your tables to fulfil the queries required and create the insert statements to achieve this.  * Approx. 5 rows per table will be needed. * Data should be persisted. * **NOTE2:** You need to be careful in the data you choose to insert. You need to ensure that the queries you design will result in data being returned for all the queries/alterations you are asked to do.  1. Write SQL to demonstrate the following:    * One UPDATE/DELETE using a subquery.    * One query using a selection function (CASE/DECODE)    * One INNER join using a GROUP Function    * One LEFT OUTER Join    * One RIGHT OUTER Join (using different tables to your right outer join)    * One UNION    * One INTERSECT    * One VIEW (which can use any of the SQL you have previously created). |

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| SUBMISSION  1. **Part 1 (Data Model)**   You can only submit your CA via the relevant assignment box in Brightspace   * ONE SUBMISSION PER GROUP to be made by ONE member of the group. * You will need to submit One ARCHIVE FILE (.zip, .rar)named with your group namee.g. CA Project Best Group.Zip * This should contain your   + A word document with screenshots of logical and relational data models and screenshots of how you implemented key constraints in the data model outlining key decisions you made e.g. CA Project Best Group.docx.   + Two SQL files – the DDL and DML files   + You need to include your Student Numbers, Names and programme codes at the start of the file.   + You need to clearly comment each SQL/set of SQL statements you include to indicate what aspect of PART 2 the SQL is intended to address.   + The SQL must execute   **NOTE**: Attempts to submit either part of the project via email will be ignored. |

## Marking Scheme

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| **Data Model** | **0** |
| Entities correctly identified and named with correct attributes | 20 |
| Domain types clearly defined and appropriately used for attributes | 10 |
| Correct primary keys identified for each entity | 10 |
| Relationships between entities are of correct type with correct cardinality on correct attribute | 20 |
| Key constraints correctly defined in data model | 15 |
| Foreign key constraints correctly defined and named | 10 |
| Relational model contains valid entities, attributes and relationships | 15 |
|  | 100 |

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| **SQL** |  |
| Create tables plus constraints (keys + value) consistent with data model | 10 |
| Insert data (which results in output being generated for all queries and differentiated from the group if relevant) | 15 |
| One UPDATE/DELETE using a sub-query | 5 |
| One query using a selection function (CASE/DECODE) | 5 |
| One INNER join using a GROUP Function | 10 |
| One LEFT OUTER Join | 15 |
| One RIGHT OUTER Join (using different tables to your right outer join) | 15 |
| One UNION | 10 |
| One INTERSECT | 10 |
| One VIEW (can use previous SQL) | 5 |
|  | 100 |