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| **Overview**  This assignment will take the form of an independent project. For the purpose of this assignment you will choose a case study or develop one of your own.  You are then required to complete the following:   * Create an ERD using ERWin (of type logical/physical in ERWin) * Build the appropriate SQL to create and populate the tables   + You can use Erwin to generate the SQL however you need to make sure you rename all constraints. * Build the appropriate SQL to retrieve data according to requirements given. * Build the appropriate SQL to alter the data structures according to requirements given. * Appropriately comment your SQL. * Demonstrate your understanding of one of the following by creating an infographic – this part of the assignment can be completed as a group or as an individual:   + Inner and outer joins;   + DML and DDL commands;   + ER modelling.   You will be provided with an opportunity to work on this project during lab classes. | |
| **Due date/time**  Monday 7th December 2015 @ 23:59 | **Worth**  30% of model marks  Average hours to complete[[1]](#footnote-1) 18-24 hours |

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| **ERWIN Requirements**   * A note indicating the name of the case study the model is for; * All entities correctly named; * Datatypes identified for each attribute; * Primary keys identified; * Foreign keys identified; * It should be possible to Forward Engineer this model to generate the SQL to create the physical database. |
| **SQL Requirements**   * Datatype requirements: Acceptable datatypes are CHAR, DATE, NUMBER, VARCHAR2. * Constraints: All constraints (other than not null) must be named. Primary keys should be named for the table followed by pk e.g. customer\_pk; Foreign keys should be named for the pair of tables involved followed by fk e.g. tbl1\_tbl2\_fk; Check constraints should be named for the attribute plus chk e.g. cname\_chk; * Data Required: Generate sufficient data to populate your tables to fulfil the queries required; Approx. 5 rows per table will be needed. However, you need to decide on the population to ensure that the queries you design will result in data being returned in all circumstances. * Details of queries to be created: * Two using an INNER JOIN on two tables. * One using an INNER JOIN on three tables. * A LEFT OUTER or RIGHT OUTER Join * The use of a SINGLE ROW function * The use of an AGGREGATE function and Grouping * Note: the single row function and aggregate function can be part of your queries using JOIN * Details of alterations to be made: * UPDATE selected data. * ADD a column to a table. * MODIFY a column on a table. * DROP a column on a table. * ADD a value constraint to a table. * Modify a constraint on a table. * DROP a constraint on a table. * Use a subquery in one of your queries/alterations |
| **Infographic Requirements**   * You will need to explain your chosen topic and illustrate with an example; * There is a range of software you can use: <http://www.creativebloq.com/infographic/tools-2131971> * As a basic default you could use PowerPoint or create a simple web page yourself.   **Examples of infographics:**  **Relational Databases:** [**http://nathanbeddome.com/wp-content/uploads/2015/05/BEDDOME-NATHAN-BrainExchange2Fall14.pdf**](http://nathanbeddome.com/wp-content/uploads/2015/05/BEDDOME-NATHAN-BrainExchange2Fall14.pdf)  **Big Data Management:**  [**http://infographicsmania.com/big-data-management/**](http://infographicsmania.com/big-data-management/)  **SQL Cheat Sheet:** [**http://www.visualinformation.info/wp-content/uploads/2009/11/0030\_SQL\_Poster.jpg**](http://www.visualinformation.info/wp-content/uploads/2009/11/0030_SQL_Poster.jpg)  **Some others (non database):** [**http://media02.hongkiat.com/infographics/Why-do-Freeways-Come-to-a-Stop-Infographic.jpg**](http://media02.hongkiat.com/infographics/Why-do-Freeways-Come-to-a-Stop-Infographic.jpg)[**http://www.siliconrepublic.com/fs/img/PerformanceHistoryofComputerSystems.jpg**](http://www.siliconrepublic.com/fs/img/PerformanceHistoryofComputerSystems.jpg) |

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| **Naming and Submission Requirements**  You will need to submit the following:   * An Erwin file which should be named with your student number <Student #>.erwin e.g. D1111111.erwin. * If you choose to work on a case study of your own, then you will need to include an additional document where you describe the case study named with your student number <Student #>CS.docx or .pdf e.g. D1111111CS.docx. Only Word or pdf files will be accepted. * A single SQL file containing all the statements required. This should be named with your student number <Student #>.sql e.g. D1111111.SQL. * Your infographic –a file named with your student number (e.g. D1111111.jpg or D1111111.pdf). If you work on this as part of a group then you need to include on your infographic the student numbers and names of all students who contributed. | |
| **Submission Mechanism**  *(Only submit through mechanism listed here – other submissions will be ignored)*   * All parts of the assignment should be submitted via the assignment box set up in your Webcourses Module. * No resubmission of assignments to achieve an improved result is allowed. | **Late submission penalty**   * Late submission will attract a penalty of up to 20%. * Assignments which do not adhere to the requirements will be treated as a late submission and will attract a penalty of up to 20%. * No submissions will be accepted later than Monday 21st December 2015. |
| **DO:**   1. Familiarise yourself with the requirements of all aspects of the assessment. 2. Ask for clarification on any aspect that is unclear. 3. Engage fully with all aspects of the assignment. 4. Work consistently on the assessment throughout the module. 5. Familiarise yourself with what plagiarism is and how you will be expected to behave within the DIT, e.g. [DITSU Overview](http://www.ditsu.ie/education/exams/cheating/), and to take steps to address any issue of concern related to your submission for this assignment. 6. Ask permission to complete Phase I as an individual if needed. 7. Ensure your infographic is readable. 8. Adhere to the naming conventions as outlined. 9. Submit via the correct submission box. | **AVOID:**   1. Unfair practice:    1. This includes using resources, ideas, documentation etc. from the web without acknowledgement.    2. Using or taking credit for the work of other students in your submission without permission and acknowledgement. 2. Attracting a late penalty by :    1. Leaving work on this assessment to the last minute.    2. Incorrectly naming your submissions. |

1. This is the average amount of time that should be meaningfully spent by a student who has fully engaged with the module, and has done all exercises and recommended reading. [↑](#footnote-ref-1)