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| **Assessment Number** | **1** |
| **Assessment Type (and weighting)** | **Design Documents -Report -(50%)**  Words-1500 (+/- 10%) |
| **Assessment Name** | **Coursework Tracking System** |
| **Assessment Submission Date** | *Week-8* |

**Learning Outcomes Assessed:**

LO1: Construct a relational data model

LO2: Normalise a relational schema to 3NF

**Use of Generative Artificial Intelligence (GAI) Applications in this Assessment**

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| AI Status | Application | Notes |
| Category A | No GAI tool is permitted. | While grammar and/or spell checkers may be used to correct individual words and sentences, the use of GAI is not allowed. This is because the learning outcomes require you to produce original assessment work without any GAI assistance.  Any GAI generated content which is presented as your own original work and is not acknowledged will be assessed for academic misconduct. |

**Assessment Brief**

The assessment components for this assignment are a Design document as mentioned below. You are required to submit a MS-Word document describing all stages of the project based on the case scenario provided below.

This is worth 50% of your overall grade for this module. Word Count for the coursework is: 1500 (+/- 10%)

**Instructions:**

* All work must be submitted on Moodle by the due date. Turnitin similarity score must not exceed 20%.
* The assignment must be in MS Word format which complies with academic standards and includes appropriate section headings.
* Reference sources must be cited in the text of the report and listed appropriately at the end in a reference list using Harvard referencing style
* Late submission within 7 days after the expiry of the initial deadline is allowed but will incur a 10 marks deduction penalty. Any submission past this period will not be marked unless a formal submission extension has been authorised.

**The context**

Envisage that you are working on placement in a Software Development Company. You have been asked to design a database system for Coursework Tracking System application. This application is going to be used by the students to keep track of their assignment. The details of the case specification are given below.

**Case Scenario:** Coursework Tracking System

The system should be able to record the assignments at a personal level as a student which can help the student stay organized and ensure that deadlines are met for the assignments. There should be a provision to store the details of courses, assignments, Instructors and other related details related to the assignment’s parts and reminders for the Assignments.

Use your understanding of database design concepts studied in this module to accomplish the below tasks. You are free to include any assumptions for the scenario given for the requirements with justification. The conceptual schema design to be created using any diagramming tool like Lucid Chart, draw.io or others as relevant. Logical mapping to be created using Workbench or any other suitable tool.

**Task 1:**

a. For the given tasks, **identify** a list of references (including at least 1 journal article and 2 book chapters, at least 2 websites to provide an evidence base from which you can draw information about the tasks.

b. Requirements Analysis: Understanding the needs of the system and its users. **[LO1]**

**Classify** the various requirements in terms of the files and the various users of the database system

c. Conceptual Schema Design: Design an appropriate database schema. **[LO1]**

**Design** the Conceptual design to meet the above requirements in terms of the various entities and the relationship relevant to the scenario. **Discuss** the design created and explain how the above requirements are going to be fulfilled.

d. Logical Design: Defining relationships, constraints, and business rules. **[LO1]**

Building on your Database Design, **make a video of 10-20 min** which should represent the completed version of your hypothetical logic design creations for the case scenario given above. In the video, **state** all the steps of mapping the conceptual design to the logical design using a suitable tool like Workbench. The link to the video to be given in the Appendix.

In the report, all the stages of mapping to be shown as well with annotations of the screenshots and justifications as discussed in the video.

**Task 2:**

a. For the given tasks, **identify** a list of references (including at least 1 journal article and 2 book chapters, at least 2 websites to provide an evidence base from which you can draw information about the tasks. **[LO2]**

b. Issues with the Logical Design: Identification of Insert, Update and Delete Anomalies. **[LO2]**

**Present** in the form of a table what you think are the principal anomalies identified in the logical design data with at least 5 records for each logical relation.

b. Performance Optimization: Ensuring efficient data retrieval, integrity and reduces storage space. **[LO2]**

**Provide** a rationale for the recommendations you are making by showing all the stages of performance optimization.

**Task 3: Personal Reflection [LO1 & LO2]**

* You are required to provide reflections on the design created for the case scenario in terms of the learning, challenges faced in the design and how these are addressed by you by evidence by signposting in the report.

**Note: ASSESSMENT DELIVERABLES**

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|  | **Assessment item** | **Due Date** | **Weight** |
| Coursework-Report | LO1 & LO2: **Design Documents -Report** | *Week 8* | 50% |

**Minimum Secondary Research Source Requirements:**

**Level HE4** - It is expected that the Reference List will contain between **five and ten sources**. As a MINIMUM the Reference List should include **one refereed academic journal** and **three academic books**

* You are expected to submit original and reflective text. Please use proper referencing techniques to avoid plagiarism.
* There should be a full reference list at the end of the report.

**Declaration:** At the end of the assessment you should also include a declaration of any software tools including Generative AI (GAI) applications that you used in developing and completing the assessment.

**Specific Assessment Criteria/Marking Scheme:**

**First class (70% and above**): students will provide

* An excellent design documentation to an excellent standard with Conceptual Design, logical design and the Visual -Video showing evidence of applying the concept with required tools and technologies to show the relational model.
* An excellent logical design documentation to an excellent standard with Normalized relations showing evidence of applying the concept with all the stages based on the relational model designed to meet performance optimization.
* An excellent reflection in the report based on the relational model and the normalization applied on the case scenario in terms of academic and personal development.
* **Extensive** research demonstrating use of a wide range of well selected secondary research sources will be evident. Academic writing style, English and referencing will be excellent. Report is professional and meets academic standards

**Upper Second Class 2(1) (60-69%)**: students will provide

* A very good design documentation to a very good standard with Conceptual Design, logical design and the Visual -Video showing evidence of applying the concept with required tools and technologies to show the relational model.
* A very good logical design documentation to a very good standard with Normalized relations showing evidence of applying the concept with all the stages based on the relational model designed to meet performance optimization.
* Justified reflection in the report based on the relational model and the normalization applied on the case scenario in terms of academic and personal development.
* Research demonstrating use of a wide range of well selected secondary research sources will be evident. Academic writing style, English and referencing will be very good. Report is professional and meets academic standards

**Lower Second Class 2(2) (50-59%)**: students will provide

* A sound design documentation to a good standard with Conceptual Design, logical design and the Visual -Video showing evidence of applying the concept with required tools and technologies to show the relational model.
* A clear logical design documentation to a good standard with Normalized relations showing evidence of applying the concept with the stages based on the relational model designed to meet performance optimization.
* A valid reflection in the report based on the relational model and the normalization applied on the case scenario in terms of academic and personal development.
* Research demonstrating use of a range of well selected secondary research sources will be evident. Academic writing style, English and referencing will be good. Report is professional and meets academic standards

**Third class (40-49%)**: students will provide

* A satisfactory design documentation with sufficient Conceptual Design, logical design showing evidence of applying the concept with required tools and technologies to show the relational model.
* A clear logical design documentation with sufficient details with Normalized relations showing evidence of applying the concept with the stages based on the relational model designed to meet performance optimization.
* A satisfactory reflection in the report based on the relational model and the normalization applied on the case scenario in terms of academic and personal development.
* Research demonstrating use of some well selected secondary research sources will be evident. Academic writing style, English and referencing will be generally competent.

**Fail (39% and below**): Students who do not meet the requirements of a third-class grade will not successfully complete the assessment.

**Marking Criteria**

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| **Component** | **Mark** |
| Task 1 - Construct a relational data model | 40 |
| Task 2 - Normalise a relational schema to 3NF | 40 |
| Task 3 - Personal Reflection | 10 |
| Research and report writing | 10 |
| Total | 100 |

**GENERAL ASSESSMENT GUIDELINES – LEVEL HE4**

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|  | **Relevance**  **Learning outcomes must be met for an overall pass** | **Knowledge and Understanding** | **Analysis, Creativity and Problem-Solving** | **Self-awareness and Reflection** | **Research/**  **Referencing** | **Written English** | **Presentation and Structure** |
| Class I (Exceptional Quality)  **85% - 100%** | Work is directly relevant and expertly addresses the requirements of the brief.  **Learning outcomes are met.** | Demonstrates breadth of knowledge and understanding of theory and practice beyond the threshold expectation for the level.  Demonstrates excellent understanding of key concepts in different contexts. | Presents an excellent and cohesive appraisal of findings through the critical analysis of information.  Draws clear, justified and thoughtful conclusions. Demonstrates creative flair, originality and initiative.  Demonstrates a critical understanding of problem-solving approaches and applies strong problem-solving skills. | Provides insightful reflection and self-awareness in relation to the outcomes of own work and personal responsibility. | A wide range of contemporary and relevant reference sources selected and drawn upon.  Sources cited accurately in both the body of text and in the Reference List/ Bibliography. | Writing style is clear and appropriate to the requirements of the assessment. An exceptionally well written answer with competent spelling, grammar and punctuation. For example, paragraphs are well structured and include linking and signposting. Sentences are complete and different types are used.  A wide range of appropriate vocabulary is used. | The presentational style and layout are correct for the type of assignment.  Evidence of planning and logically structured.  Where relevant, there is effective placement of, and reference to, figures, tables and images. |
| Class I (Excellent Quality)  **70% - 84%** | Work is relevant and comprehensively addresses the requirements of the brief.  **Learning outcomes are met.** | Demonstrates an excellent breadth of knowledge and understanding of theory and practice for this level.  Demonstrates in-depth understanding of key concepts. | Presents an excellent and cohesive discussion of findings through the interpretation and evaluation of information sources.  Draws clear, justified and thoughtful conclusions.  Demonstrates clearly creativity and initiative.  Applies excellent problem-solving skills. | Provides excellent reflection and self-awareness in relation to the outcomes of own work and personal responsibility. | A range of contemporary and relevant reference sources selected and drawn upon.  Sources cited accurately in both the body of text and in the Reference List/Bibliography. | Writing style is clear and appropriate to the requirements of the assessment. An excellently well written answer with competent, spelling, grammar and punctuation. For example, paragraphs are well structured and include linking and signposting. Sentences are complete and different types are used.  A wide range of appropriate vocabulary is used. | The presentational style and layout are correct for the type of assignment.  Evidence of planning and logically structured.  Where relevant, there is effective placement of and reference to, figures, tables and images. |
| Class II/i (Very Good Quality)  **60% - 69%** | Work is relevant and addresses most of the requirements of the brief well.  **Learning outcomes are met.** | Demonstrates a thorough breadth of knowledge and understanding of theory and practice for this level.  Demonstrates very good understanding of key concepts. | Presents a perceptive and cohesive discussion of findings through the interpretation and evaluation of information sources.  Draws clear and justified conclusions.  Demonstrates creativity and initiative.  Applies strong problem-solving skills. | Provides justified reflection and self-awareness in relation to the outcomes of own work and personal responsibility, as required by the assessment. | A range of appropriate reference sources selected and drawn upon.  Sources cited accurately in the main in the text and in the Reference List/ Bibliography. | Writing style is clear and appropriate to the requirements of the assessment. A very well written answer with competent spelling, grammar and punctuation. For example, paragraphs are well structured and include linking and signposting. Sentences are complete and different types are used.  A range of appropriate vocabulary is used. | The presentational style and layout are correct for the type of assignment.  Evidence of planning and logically structured in the main.  Where relevant, there is effective placement of figures, tables and images. |
|  | **Relevance**  **Learning outcomes must be met for an overall pass** | **Knowledge and Understanding** | **Analysis, Creativity and Problem-Solving** | **Self-awareness and Reflection** | **Research/**  **Referencing** | **Written English** | **Presentation and Structure** |
| Class II/ii (Good Quality)  **50% - 59%** | Work addresses key requirements of the brief. Some irrelevant content.  **Learning outcomes are met.** | Demonstrates a sound breadth of knowledge and understanding of theory and practice for this level.  Demonstrates sound understanding of key concepts. | Presents a logical discussion of findings through the interpretation and evaluation of information sources.  Draws clear and justified conclusions.  Demonstrates some creativity and initiative.  Applies sound problem-solving skills. | Provides valid reflection and self-awareness in relation to the outcomes of own work and personal responsibility, as required by the assessment. | Relevant reference sources selected and drawn upon.  Some sources accurately cited in both the body of text and in the Reference List/Bibliography. | Writing style is mostly appropriate to the requirements of the assessment  Grammar, spelling and punctuation are generally competent and minor lapses do not pose difficulty for the reader. Paragraphs are structured and include some linking and signposting. Sentences are complete.  A range of appropriate vocabulary is used. | The presentational style and layout are largely correct for the type of assignment.  Logically structured in the most part.  Where relevant, effective placement of some figures, tables and images. |
| Class III (Satisfactory Quality)  **40% - 49%** | Work addresses the requirements of the brief, although superficially in places. Some irrelevant content.  **Learning outcomes are met.** | Demonstrates a sufficient breadth of knowledge and understanding of theory and practice for this level.  Demonstrates a sufficient understanding of key concepts. | Presents a valid discussion of findings through the interpretation and evaluation of information sources.  Draws justified conclusions.  Demonstrates creativity and initiative in places.  Applies sufficient problem-solving skills. | Provides some reflection and self-awareness in relation to the outcomes of own work and personal responsibility, as required by the assessment. | Some relevant reference sources selected and drawn upon.  Some weaknesses in referencing technique. | Writing style is occasionally not appropriate for the assessment. Grammar, spelling and punctuation are generally competent, but may pose minor difficulties for the reader. Some paragraphs may lack structure, and there is limited linking and signposting.  Some appropriate vocabulary is used | The presentational style and layout are largely correct for the type of assignment.  Adequately structured.  Inclusion of some figures, tables and images but not always relevant and/or clear. |
| Borderline  Fail **35% - 39%** | Work addresses only some of the requirements of the brief. Irrelevant and superficial content.  **One or more learning outcomes have not been met.** | Demonstrates limited knowledge and understanding of theory and practice for this level. Demonstrates a lack of understanding of key concepts. | Presents a limited discussion of findings through the interpretation of information sources.  Draws some irrelevant conclusions.  Creativity and initiative are lacking.  Problem-solving skills are lacking. | Provides limited reflection and self-awareness in relation to the outcomes of own work and personal responsibility, when required. | Sources selected are limited and lack relevance.  Poor referencing technique employed. | Writing style is unclear and does not match the requirements of the assessment in question.  Deficiencies in spelling, grammar and punctuation makes reading difficult and arguments unclear in places. Paragraphs are poorly structured. | For the type of assignment the presentational style, layout and/or structure are lacking.  Figures, tables and images included when required but these lack clarity and relevance. |
| Fail  **<34%** | Work does not address the requirements of the brief. Irrelevant and superficial content.  **One or more learning outcomes have not been met.** | Demonstrates inadequate knowledge and understanding of theory and practice for this level.    Demonstrates insufficient understanding of key concepts. | Presents a limited discussion of findings with little consideration of the quality of information drawn upon.  Draws irrelevant conclusions.  Creativity, initiative and problem-solving skills are absent. | Provides inadequate reflection and self-awareness in relation to the outcomes of own work and personal responsibility, when required. | There is an absence of relevant sources.  Poor referencing technique employed. | Writing style is unclear and does not match the requirements of the assessment in question.  Deficiencies in spelling, grammar and punctuation makes reading difficult and arguments unclear. Unstructured paragraphs. | For the type of assignment the presentational style, layout and/or structure are lacking.  Figures, tables and images are absent when required or lack relevance/clarity. |