



# Unit: Databases Assignment Autumn – Winter 2020

## Important notes

- Please refer to the *Assignment Presentation Requirements* for advice on how to set out your assignment. These can be found on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.
- You must read the NCC Education documents *What is Academic Misconduct? Guidance for Candidates* and *Avoiding Plagiarism and Collusion: Guidance for Candidates* and ensure that you acknowledge all the sources that you use in your work. These documents are available on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.
- You **must** complete the *Statement and Confirmation of Own Work*. The form is available on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.
- Please make a note of the recommended word count. You could lose marks if you write 10% more or less than this.
- You must submit a paper copy and digital copy (on disk or similarly acceptable medium). Media containing viruses, or media that cannot be run directly, will result in a fail grade being awarded for this assessment.
- All electronic media will be checked for plagiarism.

## Assignment Notes

- You must complete all three (3) parts of this assignment.
- The total assignment should be **1500** words including all THREE (3) parts (text on diagrams and data dictionary are excluded from this word count).
- Please submit your assignment as ONE (1) document.

## Introduction

This assignment requires you to demonstrate the knowledge and skills you have acquired throughout this unit by designing and creating a functional database application that addresses the tasks given below. In order to complete this assignment, you should choose an appropriate organisation on which to conduct research and base your database application.

This assignment is split into three (3) parts and accounts for 100% of the overall mark for this unit.

Select an industry in which you are interested. For example, commercial airlines, commercial banking, retail, beauty, healthcare, fitness, publishing, hospitality, leisure and tourism, automotive, construction etc.

From the industry selected, you should investigate the sort of data they hold and the types of transactions they carry out. For example, an educational establishment will hold data about students, staff, rooms, units, assessments and results. Their transactions might include adding students to units, allocating staff to teach units, allocating rooms to units, allocating different assessments to units and recording the results for each unit assessment the student undertakes.

**Do not** choose an educational organisation as this has been used as an example.

You should reference the business or organisation that you research.

## Task 1 Analysis and Design (LO 1, 3, 4) – 45 Marks

Produce the following documents:

- a) Identify and discuss your chosen organisation, with a minimum of SIX (6) entities, and outline the likely data and information that the company would require. List and explain the functions and transactions that a database application might perform that would support some of the day to day functions of the organisation. Summarise the advantages of a DBMS to the organisation.

- b) Draw an ERD (Entity Relationship Diagram) that shows data entities that have been identified in part a) and how they relate to one another. The ERD should support the transactions that have been identified in part a) and should be fully normalised to 3<sup>rd</sup> normal form (3NF).
- c) Create a data dictionary for the entity relationship diagram using the entities identified in part b). The data dictionary should identify the tables, attributes, primary and foreign keys, data types and any constraints/ business rules from your chosen organisation.

## Task 2 (LO 4, 5) – 40 Marks

- a) Create all of the normalised tables using SQL. Show your SQL scripts and the finished tables.
- b) Enter sample data in all tables (minimum THREE (3) rows per table).
- c) Write at least FIVE (5) queries that show your understanding of SQL. SQL statements that should be used should include: Select, Update, Delete, From, Where, And, Count, Ascending, Order By. TWO (2) of the queries should join TWO (2) or more tables together.

## Task 3 Assessment and evaluation (LO 3) – 15 Marks

Provide a written assessment and evaluation of the work you have undertaken.

Your discussion should include:

- Any assumptions that you have made and how they impact the design.
- How well your database meets the data and information requirements of your chosen organisation.
- How the database supports the transactions that you identified in task.
- Any problems you had with your ER model and how you overcame them

## Guidance

Consult your tutor if you are uncertain about any aspect of this assignment.

## Submission guidelines

- Your submission should be in the form of a single word-processed document that includes any necessary diagrams.
- The word count for the document is **1500 words** (excluding text in any diagrams).
- A digital version must be submitted on a CD, USB flash drive or other similarly acceptable medium, **along with a copy of the developed database.**

## Candidate checklist

Please use the following checklist to ensure that your work is ready for submission.

Have you read the NCC Education documents *What is Academic Misconduct? Guidance for Candidates* and *Avoiding Plagiarism and Collusion: Guidance for Candidates* and ensured that you have acknowledged all the sources that you have used in your work? ☐

Have you completed the *Statement and Confirmation of Own Work* form and attached it to your assignment? **You must do this.** ☐

Have you ensured that your work has not gone over or under the recommended word count by more than 10%? ☐

Have you ensured that your work does not contain viruses and can be run directly? ☐