Nelson Marlborough Institute of Technology
Te Whare Wānanga o Te Tau Ihu o Te Waka a Maui

# DAT502 Database Concepts – Semester 2, 2017

## Assessment Two

## DUE DATE: Wednesday 8th November 2017

## Weighting: 60% of grade

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# ASSIGNMENT BRIEF

The purpose of this assignment is to complete the development of a database, and by doing so to

1. Apply the basic processes and techniques of database design.
2. Using a commercial database management system, create and use a small database.

You are required to implement a database that will support the requirements of the Student Accommodation case study detailed below.

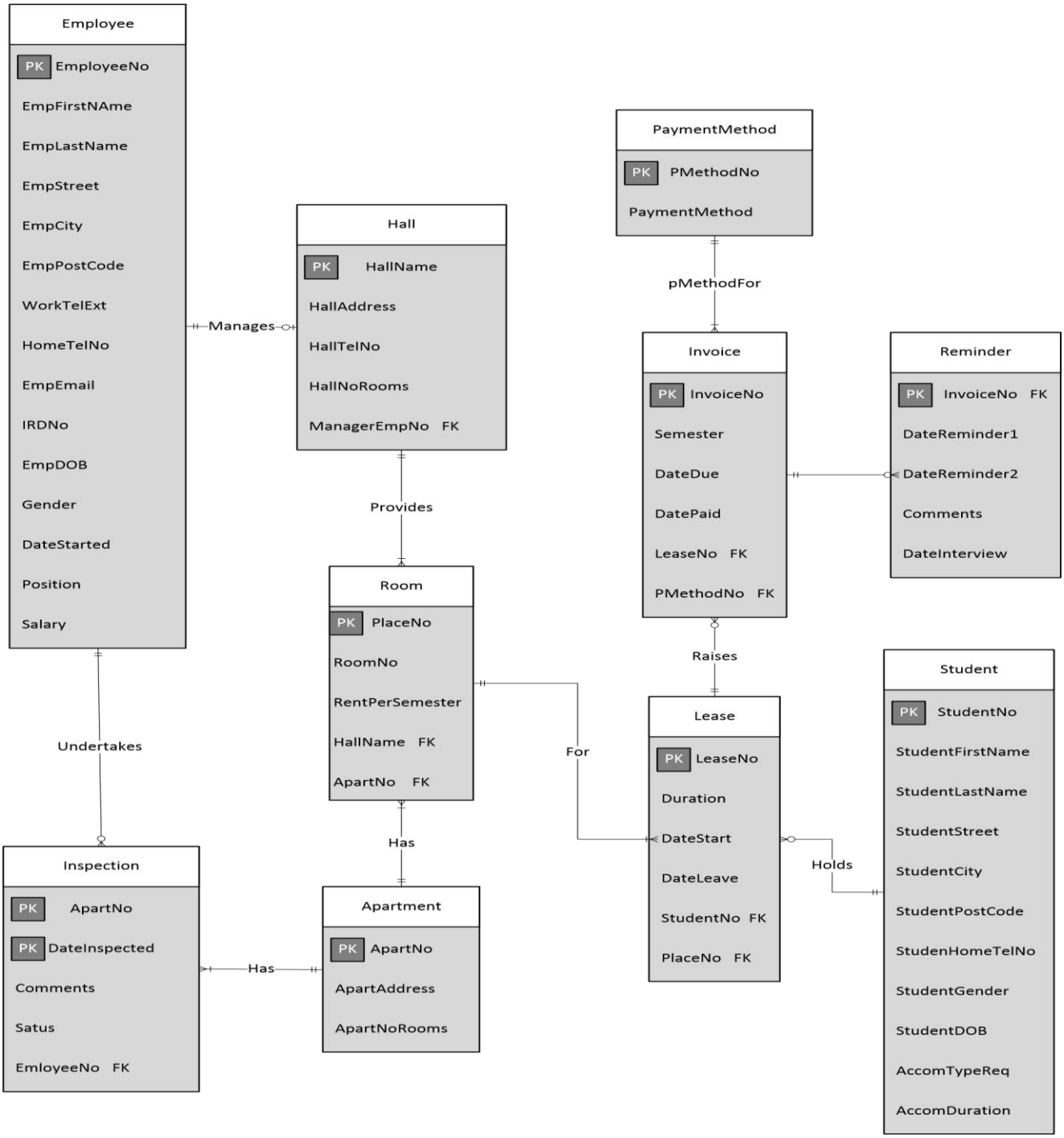
# STUDENT ACCOMMODATION SYSTEM

The accommodation office of a university wishes to create a database to monitor the allocation of accommodation to students. Each student requiring accommodation fills out an application form, which holds the student's details and an indication of the type of accommodation required and the duration. Students may rent a room in a hall of residence or student apartment. The halls provide only single rooms, which have a room number, place number and monthly rental rate. The place number uniquely identifies each room in all the halls controlled by the accommodation office and is used when renting a room to a student. Each hall is managed by a member of the accommodation office.

The Accommodation Office also offers student apartments, each identified by a unique apartment number. These apartments are fully furnished and provide single room accommodation for groups of three, four, or five students. Each bedroom in an apartment has a monthly rental rate, a room number, and a place number. The place number uniquely identifies each room available in all student apartments and is used when renting a room to a student. Apartments are inspected by members of the Accommodation Office on a regular basis to ensure that the accommodation is well maintained.

New lease agreements are negotiated at the start of each academic year with a minimum rental period of one semester and a maximum rental period of one year. The students pay for their accommodation throughout the academic year and are sent an invoice at the start of each semester. If a student does not pay by a certain date, two reminder letters are sent.

Scenario taken from:
Connolly, T. & Begg C. (2004) Database Solutions: A step-by-step guide to Building Databases. 2nd Edition. Pearson Education Limited, England.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EmpFirstNAme
EmpLastName
EmpStreet
EmpCity
EmpPostCode
WorkTelExt
HomeTelNo
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IRDNo
EmpDOB
Gender
DateStarted
Position
Salary
Manages
Hall
PK HallName
HallAddress
HallTelNo
HallNoRooms
ManagerEmpNo FK
Provides
PaymentMethod
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PaymentMethod
pMethodFor
Invoice
PK InvoiceNo
Semester
DateDue
DatePaid
LeaseNo FK
PMethodNo FK
Reminder
PK InvoiceNo FK
DateReminder1
DateReminder2
Comments
DateInterview
Room
PK PlaceNo
RoomNo
RentPerSemester
HallName FK
ApartNo FK
Raises
Undertakes
For
Lease
PK LeaseNo
Duration
DateStart
DateLeave
StudentNo FK
PlaceNo FK
Student
PK StudentNo
StudentFirstName
StudentLastName
StudentStreet
StudentCity
StudentPostCode
StudenHomeTelNo
StudentGender
StudentDOB
AccomTypeReq
AccomDuration
Holds
Has
Inspection
PK ApartNo
PK DateInspected
Comments
Satus
EmloyeeNo FK
Has
Apartment
PK ApartNo
ApartAddress
ApartNoRooms

# YOUR **TASKS**

1. Produce a physical design of the Student Accommodation database.

   The outputs from your physical design should include:
   - A Database creation script (DDL) - this script should show your understanding of how to support business rules and data requirements.
   - A list of any design decisions made / assumptions made
   - Create a data dictionary and Estimate the size of the database

2. Build the database in Access by running your DDL statements.

3. Create at least one data entry form for the database.

4. Generate and load appropriate test data. This will be done using SQL scripts, apart from the table/s you have created a data entry form for. There should be a minimum of 100 rows across all the tables and no table should contain less than 5 rows. Provide screenshots of the original contents of your table.

5. Write and run a set of SQL queries required to provide the information needs of the Student Accommodation system. These are listed below:

   1. A list of all the students in a particular Hall of Residence
   2. A list of all students who have been sent one reminder notice
   3. A list of all the rooms that are currently rented
   4. Create your own Query
   5. Create your own Query

   Provide a screenshot of the SQL queries and their results. Include a brief description of the purpose of each query.

6. Create a report in Access to display the results of one of the queries you have written.

7. Document any significant problem(s) you encountered and the approach you took to solving it/them. This should show you made a genuine effort to solve these problem(s) and the learning you achieved from that process.

8. When finished submit an electronic copy of your database and your assignment report (template on Moodle).

# MARKING SCHEDULE

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|---|---|
| Physical Design<br><br>• Well-formed relations<br>• Accurate DDL<br>• Business Rules and data requirements supported, use of constraints (data dictionary, estimate of database size)<br>• Assumptions | 30 |
| Database Build | 5 |
| Form | 7.5 |
| Database with test data as specified | 5 |
| SQL Queries<br><br>• Accuracy<br>• Approach<br>• All bullet points covered<br>• Queries and results match their purpose | 25 |
| Report | 7.5 |
| Documentation of problems (problems identified, problem solving approach taken) | 10 |
| Overall Quality of work | 10 |
| **TOTAL** | **100** |

## LATE ASSIGNMENT POLICY

A) All assignments must be handed in by the due date. An assignment handed in after the due date will incur a penalty unless:
   (i) Your performance has been affected by factors beyond your control, such as illness, injury, childbirth or bereavement; and
   (ii) The Course Co-ordinator has agreed to extend the time for completion of the assignment.

B) An assignment handed in after the due date, where an extension of time has not been granted by the Course Coordinator, will incur a penalty of 20% of your total marks for that assignment for each day that the office of the School of Business and Computer Technology is open, after the due date.

## STUDENTS SHOULD TAKE CARE TO AVOID PLAGIARISM

**What is plagiarism?**

Plagiarism is the inclusion in your assignment of material copied or closely paraphrased from someone else's writings (including textbooks and assignments by other students) without an explicit indication of the source of the material. It is considered to be cheating. Although the School encourages discussion amongst students, students who collaborate should be careful not to plagiarise.

**Penalties for plagiarism**

NMIT takes a serious view of plagiarism. Even when you are not intending to cheat, it is clear that submitting someone else's work or ideas is not evidence of your own understanding of the material and cannot earn you marks. Penalties for plagiarism can extend from a zero grade for the assignment plagiarised to imposing an overall coursework grade of zero in the course concerned.

**How to avoid plagiarism**

The work and ideas of other people must be acknowledged in your Bibliography in APA style. Information on this can be found in Emerson, L. (2005). *Writing guidelines for business students.* (3rd edition). Southbank, Victoria: Thomson Dunmore Press.