# CM2101 – Database Systems Coursework

**Title: Woodbridge Hospital Trust Database Application**

***Note that this coursework is an individual assignment. Your submission should be entirely your own work.***

Issue date: Tuesday 30th October 2018

**Due date: Tuesday 27th November 2018 at 1700.**

Responsible Staff Member: Rob Lothian

**Background**

Woodbridge Hospital is managed by the Woodbridge Hospital Trust. You have been contracted by them to design a database to improve their record management. The head of patient records has provided you with the following information.

When a patient is admitted, they are given a unique patient number and assigned to a ward. Patients have appointments to receive treatments from doctors at a particular time in a specified room. Doctors are qualified to carry out certain treatments and have a qualification date for each of these treatments.

The hospital trust has provided the following sample of the data that need to be stored in the new database. Note that the tables in your database will NOT correspond directly to the tables shown here.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Patient Number** | **Patient Name** | **Sex** | **Date Admitted** | **Ward Number** | **Ward Name** |
| P0001 | George Wells | M | 06/11/2017 | W02 | Primrose |
| **Appointments** | | | | | |
| **Date** | **Time** | **Room** | **Doctor** | **Treatment** | |
| 06/11/2017 | 1300 | A2 | Balfour | Eye Examination | |
| 07/11/2017 | 0600 | B3 | Balfour | Laser Eye Surgery | |
| 08/11/2017 | 1530 | A1 | Golding | Eye Examination | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Patient Number** | **Patient Name** | **Sex** | **Date Admitted** | **Ward Number** | **Ward Name** |
| P0002 | Jean Austen | F | 13/01/2018 | W01 | Tulip |
| **Appointments** | | | | | |
| **Date** | **Time** | **Room** | **Doctor** | **Treatment** | |
| 19/01/2018 | 0400 | B3 | Wolfe | Heart Surgery | |
| 22/02/2018 | 1130 | C1 | Pavic | Physiotherapy | |

|  |  |
| --- | --- |
| Treatment | Qualified Doctors (Date Qualified) |
| Heart Surgery | James Wolfe (14/08/2015) |
| Eye Examination | Andrew Balfour (29/05/2001) Wendy Golding (11/03/2010) |
| Laser Eye Surgery | Andrew Balfour (17/11/2003) |
| Physiotherapy | Petra Pavic (30/09/1997) Derek Chen (03/05/2013) |

### Your task

1. Design and implement a database for the Woodbridge Hospital Trust using SQL Server.

To avoid confusion with previous lab work, please create a database CW<matno> and use it for your coursework (<matno> is your own matriculation number).

Enter the data shown above in the appropriate tables. You should NOT add any other records. However, if any table requires a unique identifier to act as primary key, you should add one.

You should apply the following domain integrity rules, as well as any appropriate to unique identifiers you have added:

* Patient numbers have the form ‘P’ followed by a 4-digit number.
* Ward numbers have the form ‘W’ followed by a 2-digit number.
* Sex is either ‘M’ or ‘F’.

You should store your SQL commands in the following SQL scripts.

Create.sql: contains all the table create statements.

Populate.sql: contains commands to insert all the data into the tables.

Given an initially empty database, executing the commands in Create.sql followed by Populate.sql should result in the creation of the required tables containing all the necessary data, without generating any error messages.

1. Design the following queries in SQL:
2. List all rooms in which eye treatment has taken place. (i.e. any treatment with ‘Eye’ in its description.)
3. For all appointments involving male patients, list the information: (patient name, doctor name, treatment).
4. List the number of appointments each patient has had with each doctor (patient name, doctor name, number of appointments). List only those patient-doctor combinations that have had more than one appointment together.

Queries.sql: contains the queries.

1. Write create statements for the following stored procedures:
2. A procedure that returns the number of patients in a given ward. The ward number should be an input parameter and the number of patients should be an output parameter. Also write test code to execute the procedure and write the number of patients to the screen.
3. A procedure that discharges a patient specified by the user. The procedure should take the patient’s number as input. The patient’s details, including their appointments, should be added to archive tables (creating the tables if they do not already exist). The patient’s data should then be deleted from the remaining tables.

Procedures.sql: contains the code that creates the procedures.

**Coursework Submission:** You should submit your coursework electronically to the drop box on Moodle.

You need to supply the following SQL scripts:

Create.sql

Populate.sql

Queries.sql

Procedures.sql

The scripts should be uploaded to the Assessment dropbox on CampusMoodle by the deadline.

Please leave these scripts uncompressed and upload them as separate files (this makes marking easier).

**Grading:**

Create.sql (40%)

Populate.sql (10%)

Queries.sql (25%)

Procedures.sql (25%)

***This assignment is the only coursework for this module. It will receive a grade A-F and be combined with the exam grade according to the following table.***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Overall module grade in appropriate row and column | | **Exam Grade** | | | | | |
| **A** | **B** | **C** | **D** | **E** | **F** |
| ***Coursework*** | ***A*** | A | A | B | B | C | E |
| ***Grade*** | ***B*** | A | B | B | C | C | E |
|  | ***C*** | B | B | C | C | D | E |
|  | ***D*** | B | C | C | D | D | E |
|  | ***E*** | C | C | D | D | E | E |
|  | ***F*** | E | E | E | E | E | F |

**Individual Feedback will be posted on CampusMoodle by 8th January 2019, in accordance with RGU policy.**