

**APT1050B: Database Management Systems**

**Lab Assignment #3:**

**Given on: 25th May 2022; Due: 16th June 2022**

***Instructor: Dr. G. Chege***

**Project Case: Mountain View Community Hospital – DB Implementation**

This Lab work is a follow-up on the modeling you did in Written Assignment#1 Mountain View Community Hospital. Here, you are going to implement the hospital case in a MySQL database. *The case description is re-produced here for completeness*.

**Project Description:**

After completing a course in database management, you have been hired as an intern by Mountain View Community Hospital. Your first assignment is to work as part of a team to develop a high-level E-R diagram for the hospital. You conduct interviews with a number of hospital administrators and staff to identify the key entities for the hospital. After a short time your team has identified the following entities:

* **Ward** – a treatment center within hospital. Examples of wards are maternity and emergency care. Each ward has a ward number (identifier) and a ward name.
* **Patient** – a person who is either admitted to the hospital or is registered in an outpatient program. Each patient has a patient number (identifier) and name.
* **Physician** – a member of the hospital medical staff who may admit patients to the hospital and who may administer medical treatments. Each physician has a physician ID (identifier) and name.
* **Bed** – a hospital bed that may be assigned to a patient who is admitted to the hospital. Each bed has a bed number (identifier), a room number, and a ward number.
* **Item** – any medical or surgical item that may be used in treating a patient. Each item has an item number (identifier), description, and unit cost.
* **Employee** – any person employed as part of the hospital staff. Each employee has an employee number and name.
* **Treatment** – any test or procedure performed by a physician on behalf of a patient. Each treatment has a treatment ID that consists of two parts: treatment number, and treatment name.

The team next recorded the following information concerning relationships:

* Each hospital employee is assigned to work in one or more wards. Each ward has at least one employee, and may have any number of employees. The hospital records the number of hours per week that a given employee works in a particular ward.
* Each ward has exactly one employee who is designated nurse-in-charge for that ward.
* A given patient may or may not be assigned to a bed (since some patients are outpatients). A bed may or may not be assigned to a patient.
* A patient must be referred to the hospital by exactly one physician. A physician may refer any number of patients, or may not refer any patients.
* Physicians may perform any number of treatments on behalf of any number of patients, or may not perform any treatments. A patient may have treatments performed by any number of physicians. For each treatment performed on behalf of a given patient by a particular physician, the hospital records the following information: treatment date, treatment time, and results.
* A patient may optionally consume any number of items. A given item may be consumed by one or more patients, or may not be consumed. For each item consumed by a patient, the hospital records the following: date, time, quantity, and total cost (which can be computed by multiplying quantity and unit cost).

**Required**

Use the ERD data model you developed for the Mountain View Community Hospital case in

Written Assignment#1 to complete the following task:

**Use the MySQL DBMS embedded in Xampp to implement this case as follows:**

1. Develop the database for the Mountain View Hospital with all the tables and business rules explained above;

(*Get screen captures of the DB design and copy into Word for submission*).

1. Populate the tables with sample data (*ensure referential integrity* in the data samples); Insert at least 10 records into the Patient table and 5 records in each of all the other tables. Ensure one of the patients contains your particulars – a record with your name is mandatory.

(*Get screen captures of the inserted data in browse mode and copy into the word document for submission);*

1. Use SQL to:
2. Write at least one **data insertion SQL statement** for each of the tables; *Copy your SQL statement and result into the word document for submission;*

ii) Write some five SQL **queries** to retrieve data from the database so as to include data from more than one table in a given query; the queries are of your own choice. At least one query should retrieve the record with your name as a patient.

(*Copy your SQL statements and results into the word document for submission);*

*Submit your Lab as a word/pdf document via Blackboard using the submission link for this assignment. All results should be screen captures copied into word as indicated above and labelled to indicate the respective section.*

Do NOT copy from a colleague or share your work, to avoid failing the Lab.