**CS3431-A16: Project Description**

**Building a Database Application**

**Phase 1: Initial Design and Implementation**

**Post Date:** T 9/20

**Due Date:** F 9/23 at 11:59pm

**Late Policy:** 10% off until Sa 9/24 at 11:59pm

**Teams:** The project is done in teams of two

**Submission:** Make sure to include both of your names on the project submission. Only one student is to submit the assignment so be certain to determine who that will be in advance. The ERD and relational schema is to be submitted in either Word or PDF format. The SQL code should be in a p1.sql file.

**Description:**

In this phase you will be designing the ERD, the relational schema, and writing the SQL to create the database that software engineers will use to create a Faulkner Hospital application to manage the directory and create paths to visitors’ destinations. For this assignment you will implement the information for just Faulkner Hospital’s floors 1 and 3. Please see the attached hospital directory and floor plans. You will want to sort the hospital directory tabs (note there are two!) by the location in the building so you can extract just the 1st and 3rd floors. In the floor plans, the yellow highlighted areas and adjoining rooms are the only part of the hospital that visitors or patients are permitted to be. On the image (you may need to convert it to another format other than PDF), place dots at the entrances of all of the offices, and along the paths that visitors/patients can go, place dots on the image. Connect each dot with its immediate neighbors. You should not have a large number of dots, just what’s necessary to reach each of the destinations on the map. Write down the map coordinates for each of your dots and their neighbors.

The database includes the following:

1. Health care providers who have ids, first names, last names, titles (MD, RN, etc.), and locations within the hospital. The default title is MD. Names are non-null.
2. Titles that have a unique acronym, and the actual name. For example, MD and Medical Doctor. RN and Registered Nurse. You will need to look up a number of the titles on the web.
3. Services and Medical Practices have unique names and either locations or floors (you will need to make a design choice with respect to this – state your reasons for your design).
4. Locations have a unique id, x and y coordinates on the map (also unique), a location name, a location type, and the floor of a building. They also contain a list of all of the immediately neighboring locations. The location type will indicate if it is an office, a service area, or a hallway. You will need to create a logical naming system for locations that are not in offices or service locations.
5. There are floors that have a name and the building they are in. There are only two buildings, Faulkner Hospital and Belkin House. All of the locations in the directory are in Faulkner Hospital unless it states Belkin House.
6. Paths consist of a starting location, and the list of connected locations to the ending location.

**Requirements:**

1. Design an ERD that captures the above requirements. Follow the notations given in the course slides, and also follow the given guidelines for Good Design.
2. State any assumptions that you make in addition to the above requirements.
3. Create a relational model for the above application. You need to follow the rules that convert the ERD to relational model.
4. Write the SQL code in a file named p1.sql to create the tables including the constraints.
5. Enter the directory and floor plan data for floors 1 and 3 including map coordinates.