**[ISGB/BYBG 7973:](https://fordham.blackboard.com/webapps/blackboard/execute/launcher?type=Course&id=_568336_1&url=" \t "_top) Group Assignment**

**DATABASE MANAGEMENT**

**DUE: December 19**

Follow the listed instructions carefully in completing this assignment.

The following mini case describes a clinic’s patient management environment and some of the documents that describe the care provider and patient interaction.

**TO DO**

* Using Oracle Data modeler, develop a logical model (ER diagram) identifying objects that the clinic needs to track and relationship between the objects.
* Identify attributes for each and object and each relationship. (Note that not all relationships would have attributes. Which relationships have attributes would partly depend on the logical and physical objects you have identified.)
* Identify any sub-type super-type relationships.
* Resolve any three way relationships into one to many relationships.
* Resolve any many to many relationships into one to many relationships.

*Copy the E-R diagram to a MS Word document*

* Translate the logical model (ER diagram) into a relational model diagram. Make sure to identify the data type for each attribute. Make sure that primary key for each object (including associative entities) are identified. Make sure that foreign key relationships are properly identified.

*Add the relational model diagram to the MS word document*

* Generate DDL script for creating tables and constraints on Oracle.

*Add the script to MS Word document*

* Follow steps similar to those in the second tutorial to create a database and then a user for the database
  + Use Database Configuration Assistant to create a database. Provide a name of the database as CLINIC\_{YourGroupName}. Provide administrative password for this database and the password for Oracle\_user (in my case Oracle.) Make sure to leave the container database box unchecked.
  + Provide a password for user SYS
  + Connect to this database as user SYS with role as sysdba. Open DBA view, use the sys connection; create a new user for the database – provide username and password. (Note that in Oracle, a schema with the name as user is created.)
  + Connect to the database as this user.
* Using the script above, create table and constraints.
* Populate sample data into each table. Make sure data for at least five patients, five nurses and four physicians, ~~four visit types,~~ five drugs and 15 visits. Include patients with the same names as your group members.
* Use SQL commands to answer each of the following information requests. Include query and the result tables in write up in your write up.
  + List all the patients
  + List patient id and name of each patient and number of visits the patient has made
  + List the drug that has been prescribed most often.
  + Identify the number of visits handled by each nurse.
  + Identify all the physicians that a patient has seen. If the patient has only been seen by a nurse and not by any physician, corresponding columns in the resulting table should contain blank.

*Add queries and result tables to the MS Word document.*

*Save the MS Word document detailing your work. Submit the MS word document on Blackboard.*

**MINI-CASE**

**Manhattan Fordham Clinic**

Manhattan Fordham Clinic is an urgent care facility in Upper West Side. It provides immediate care to walk in patient in the neighborhood.

When a patient visits the clinic for the first time he/she is assigned a unique identifier which is then used to track the patient’s subsequent visits to the clinic. (If the patient does not remember the id, the receptionist can look up the patient using patient name and address.) In addition to the identifier, the clinic keep patient’s contact information including address and phone number.

On each visit to the clinic, the patient is assigned a unique *visit ID* which helps the clinic keep track of the date on which the visit took place, the care provider(s) who saw the patient, and the reason for the visit.

The patient is initially seen by a registered nurse (RN). The nurse enter vitals in the patient visit form and decides on the severity of the situation. The nurse may then decide if the patient needs to see a physician (MD). In many cases, the visit ends without the patient seeing a physician. The nurse or the physician may order additional tests (EKG, X-ray, blood test, ..) Based on the results of the tests and the clinical observations, the nurse and/or the doctor enter the diagnosis as one or more medical codes.

At the end of consultation the nurse and the doctor specify a treatment plan. The plan may include prescription for one or more medications; and specifies the number of days the medication is to be taken and amount of the drugs to be taken each day. The clinic provides the medication to the patient from its own pharmacy. The nurse also adds any additional instructions.

Screen used to capture patients visit is displayed as the attached document. All the text with white background are labels used on the screen to help employees navigate the screen. All areas with yellow background are used for input by the support staff, the registered nurse or the physician. All areas with pink background are filled automatically via database look-up once the corresponding input is completed (Thus once the Patient ID is provided, all other information about the patient is displayed. Similarly in prescription, the description of the medication is automatically filled as soon as the DrugID is filled in.) Areas with sky blue background are either calculated (e.g., Units to be Dispensed) or generated by the system (e.g. VisitID, a unique id number generated for each new visit record.)

The clinic employs for different type of employees: physicians, registered nurses technologists, and administrative staff. The state law requires that for nurses, physicians and technologist, the clinic keep track of professional certifications.