DBMS Lab 2017-18 Spring Semester

Lab Day 2 (January 16, 2018) – 60 Marks

1. Consider a hospital having several departments (like cardiology, orthopedics, neurology, etc.). Each doctor can belong to only one department. A patient may be admitted under multiple departments and be assigned to one or more doctors. There is a date of admission and a date of release for each patient.

   A patient is identified by a patient_id. For each patient, we also need to maintain information like name, address (comprised of house no., street name, pincode and state), gender, date of birth, age and one or more phone numbers. For each doctor, we need to maintain doctor_id , name, date of birth, department and highest degree. A department is identified by its department_code. Other attributes of a department are department name, name of the HoD and number of wards it has.

   Draw an Entity-relationship (E-R) diagram for capturing the above-mentioned information, clearly identifying all the entity sets (strong and weak if any), relationship sets, cardinalities, participation and attributes (including the type of attribute like key attribute, multi-valued attribute, derived attribute, etc.). State all assumptions that you make. They should be reasonable.

   First draw the ER diagram on the piece of paper provided. Then draw it using the ER-Diagram drawing tool suggested during the lab. Write your roll number, name and PC number on the piece of paper.

   Submit (a) The piece of paper where you have drawn the ER diagram and (b) a zip file containing the exported output of the ER diagram as well as the image file for it (Name it as Lab2_<Roll_no>_1.zip) through Moodle for Lab Day 2 Assignment 1. **[25]**

2. Write SQL statements to **[5×7=35]**
   (a) Create a table **department** having columns **dept_cd** char(2), **dept_name** varchar(20), **year_of_establishment** numeric (Should contain integer - Put appropriate specifier). **dept_cd** should be specified as primary key
   (b) Create a table **student** having columns **roll_no** char(6), **name** varchar(20), **dept_cd** char(2), **address** varchar(50). **roll_no** should be specified as primary key
   (c) Insert following rows in the department table: (CS, Computer Sc., 1960), (PH, Physics, 1940), (ME, Mechanical Engineering, 1910).
   (d) Insert following rows in the student table: (A001, CS, First Home), (A002, CS, Second Home), (A003, PH, Third Home), (A004, ME, Fourth Home).
   (e) Retrieve details of all departments established before 1945
   (f) Retrieve details of all students including their roll_no, name, address, dept_cd and dept_name
   (g) Retrieve details including roll_no, name and dept_name for students belonging to departments established before 1945.

   [Note that, all the above Select queries should be such that for other rows also (if inserted in the tables), the result will be retrieved correctly]

Execute your SQL statements on MySQL to check if they are working correctly. Put all the SQL statements in a text file (Name it as Lab2_<Roll_no>_2.txt). At the start of the text file there should be a header containing your information: Roll No, Name, PC Number. Submit the text file through Moodle for Lab Day 2 Assignment 2.

[Penalty for plagiarism/copying: You will be awarded 0 for all the problems for the lab day and an additional 5 marks will be deducted out of the total of 40 in Lab. All persons involved will be awarded the same penalty irrespective of who has copied from whom]