Homework #3  
Due: March 3, 2015

1. Read Chapter 5 and practice the 50+ SQL examples in this chapter

2. Consider the following relational schema:

   Employee(eid: integer, ename: string, age: integer, salary: real)

   Department(did: integer, dname: string, budget: real, mgrid: integer)

   Works(eid: integer, did: integer, pct_time: integer)

   An employee can work in more than one department; the *pct_time* field of the Works relation shows the percentage of time that a given employee works in a given department.

   a) Write an SQL query to find the IDs of managers who control the largest amounts. (Hint: Create a table in the WHERE clause to compute the total budget for each manager)

   b) Write an SQL trigger to express the following constraint: “Whenever an employee is given a raise, the manager’s salary must be increased to be at least as much.” (increasing a manager’s salary to be equal to the employee who received the raise, if the manager’s salary is less than the employee’s new salary)

3. Consider the following relational schema:

   Faculty(fid: integer, fname: string, deptid: integer)

   Student(snum: integer, sname: string, major: string, level: string, age: integer)

   Class(name: string, meets_at: time, room: string, fid: integer)

   Enrolled(snum: integer, cname: string)

   Enrolled has one record per student-class pair such that the student is enrolled in the class. Write an SQL assertion for the following integrity constraint: “Every faculty member must teach at least two courses.”