COMP 3311 assignment 3

Spring 2015

Due date: 10th April 2014 (12 noon)

Assignment Rules:

1) This is an *individual* assignment; you are required to work on your own.

2) The assignment solution you submit must be solely your own work; copying or letting others to copy are both considered cheating.

3) Please run the solution SQL code on Oracle before submitting, if it does not run correctly, you **may NOT have the marks**.

Assignment description:

Part 1. Creating tables using the SQL Data Definition Language:

Create the following 10 tables with the given constraints. Use exactly the *same table names* (i.e. “course”, “prof”,…etc) and *attribute names* (i.e. “course_ID”, “course_name”,… etc) as listed below, otherwise marks will be deducted. The table order below is *not necessarily the correct order* for creating the tables; it is merely describing the column types and the different constraints of the tables.

- course table

1. course_ID: varchar2(8), primary key.
2. course_name: varchar2(80).
3. credits: number(3).

- prof table

1. staff_ID: number(8), primary key.
2. last_name: varchar2(80).
3. first_name: varchar2(80).

- prof_phone table
  1. staff_ID: number(8).
  2. phone_number: number(8).

  staff_ID foreign key referencing the prof() table, primary key (staff_ID, phone_number).

- prerequisite table
  1. main_course_ID: varchar2(8).
  2. prereq_course_ID: varchar2(8).

  main_course_ID foreign key referencing the course_ID column of the course() table, prereq_course_ID foreign key referencing the course_ID column of the course() table, primary key (main_course_ID, prereq_course_ID).

- prof_teach table
  1. staff_ID: number(8).
  2. course_ID: varchar2(8).
  3. offering_no: number(8).

  staff_ID foreign key referencing the prof() table, (course_ID,offering_no) foreign key referencing the offering() table, primary key (staff_ID, course_ID,offering_no).

- pref_TA table
  1. staff_ID: number(8).
  2. student_ID: number(8).

  staff_ID foreign key referencing the prof() table, student_ID foreign key referencing the TA() table, primary key (staff_ID, student_ID).

- supervise table
  1. staff_ID: number(8).
  2. student_ID: number(8).

  staff_ID foreign key referencing the prof() table, student_ID foreign key referencing the TA() table, primary key (staff_ID, student_ID).

- pref_offering table
  1. student_ID: number(8).
  2. course_ID: varchar2(8).
  3. offering_no: number(8).

  student_ID foreign key referencing the TA() table, (course_ID,offering_no) foreign key referencing the offering() table, primary key (student_ID, course_ID, offering_no).

- TA table
  1. student_ID: number(8) , primary key.
  2. last_name: varchar2(80).
  3. first_name: varchar2(80).
  4. phone: number(8).
  5. course_ID: varchar2(8), NOT NULL.
  6. offering_no: number(8), NOT NULL.

  (course_ID,offering_no) foreign key referencing the offering table.

- offering table
  1. course_ID: varchar2(8).
  2. offering_no: number(8).
  3. YearSemester: varchar2(10).
  4. classroom: number(5).
  5. no_of_stds: number(5).
  6. staff_ID: number(8), NOT NULL.

  course_ID foreign key referencing the course() table, staff_ID foreign key referencing the prof() table, primary key (course_ID, offering_no).

Part 2. Write the following SQL queries:

1. Find the course_ID for courses with the highest number of credit.
2. Find the staff_ID, last_name, first_name of all the professors who have taught 'Comp3311' but not 'Comp4311'.
3. Find the student_ID, last_name, first_name of the TAs who were preferred by the most number of professors.
4. Find the staff_ID, last_name, first_name of all the professors who have NOT taught all the prerequisites of 'Comp3311'.
5. Find the staff_ID, last_name, first_name of each professor who has taught *all* the offerings of 'Comp3311'

Submission:

- Write SQL statements and put them into **two plain text files**:

  - create.txt for creating the tables given in part 1,

  - query.txt for the queries in part 2.

- The two files will be tested directly on SQLPlus by issuing

  @create.txt

  and

  @query.txt

- Put your name, ID as comment on the first line of each of your text files. Comments are enclosed by "/*" and "*/"

- **Marks will be deducted** if you create the files in other formats (i.e. doc, rtf, etc), or if you do not put the name and ID information correctly.

- Zip the two text files into a zip file named "ass3.zip" and submit the zip file to the CASS.

- Submit the zip file to the CASS submission system:

  http://cssystem.cse.ust.hk/home.php?docbase=UGuides/cass&req_url=UGuides/cass/index.html

- No Late submission will be accepted!