CSC 355 Database Systems 502
Assignment 4 (2/4)

Due 11:59:00pm, Monday 2/11.

Reading: The Lecture 7 Replacement Exercise, the posted Lecture 8 and 9 Slides, and Sections 6.2-6.4 of Ullman/Widom. For next week: Sections 6.6 and 3.1-3.3 of Ullman/Widom.

Your task in this assignment is to write a set of SQL queries on a set of tables I supply.

1. First, download the script file company2019.sql from the course web site and run it in SQLDeveloper to construct a database instance containing five tables: EMPLOYEE, DEPARTMENT, PROJECT, ASSIGNMENT, and DEPENDENT.

Inspect the tables and their schemas in SQLDeveloper so that you understand the structure of the database. I recommend that you sketch the schema of the database, including all primary keys and foreign keys, before you write any queries.

2. In a separate .sql file (do not modify company2019.sql), write a script that contains the following eight SQL queries (in this order):

1. List the full names of all employees who are directly supervised by a male employee.

2. Display the average salary of all employees in the Engineering department.

3. Give a list of the IDs and last names of all employees who are assigned to some project located in Chicago, ordered alphabetically by the last name.

4. For each project, display the project number, the project name, and the total hours spent on that project. List the projects from the one with the largest total hours to the smallest. (Note: It is okay to have either NULLs or zeroes in the query output for those projects that have no one assigned to them, but those projects should be included.)

5. List the IDs of all employees who are assigned to at least three projects. (Hint: Start by counting how many projects each employee is assigned to.)

6. For each department, display the department number, the total number of employees in the department and the largest salary of an employee working in that department. Order the output from the department with the fewest employees to the one with the most.

7. Give an alphabetical list of the full names of all female employees who have a spouse.

8. List the first name and salary of all employees who work at least 15 hours on the Public Relations project.

Add a comment before each query in your script file to label the queries 1 through 8 (e.g., the comment '-- 1.' on a line before the first query, the comment '-- 2.' on a line before the second query, et cetera).

Run the script file containing your queries to verify that your results are correct.

3. Include a comment at the top of your script file giving your name, the course number and section, the assignment number, and the date of submission, e.g.:

/*
YourName
CSC 355 Section 502
Assignment 4
SubmissionDate, 2019
*/

4. Submit the .sql file containing your queries to the Assignment 4 submissions dropbox. You do not have to submit the output generated by the script. Do not submit company2019.sql or include code from it in your submission -- your submitted file should contain only your queries and the requested comments.

Remarks:

1. For all assignments, it is your responsibility to make sure that the files you have uploaded are readable and in the correct locations. You should always check that you can successfully download your submitted files back from the course web site to be sure that they have been uploaded correctly.

2. Remember that this assignment, like all others, must be completed individually -- no collaboration among students is allowed. Your assignment must be your own individual work.

Eric J. Schwabe – 02/04/19