COEN 280 - Database Systems
Spring 2019
Homework Assignment 2
Due: Monday April 29,
@11:59pm

Part 1: Map the EER diagram into Oracle RDBMS model (20 points)
Convert your EER conceptual schema into tables and then implement these tables in the Oracle database. You can change your EER design freely during you conversion since your schema might not optimal. You will get full credit for part 1 and part 2 if your query is working properly.

Note: You are required to populate your database with the given data and test data with the queries in part 2. Use the excel data files for this. The excel file has tabs in the bottom for each data section. Also, go through the queries in part 2 to make reasonable assumptions regarding the attributes unavailable in the files provided and fill them out.

 IMPORTANT Notes:

▪ **The following procedure must be followed to access the Oracle database server:**

//$ is the system prompt

$ sqlplus //Use sqlplus to issue sql statements

▪ **Reduction Guidelines for Oracle RDBMS:**

- Do not use triggers.
- Use reference for foreign keys and specify what action should be taken in case of update and/or deletion of the referenced tuple/row (i.e., cascade, reject, or setdefault/null).

▪ **Reference**:

Refer to Oracle SQL reference manual for information on how to create tables, indexes, insert data, etc. (http://docs.oracle.com/cd/E11882_01/server.112/e41084.pdf).

Part 2: Queries on the database (100 points)

1. List the first and last names of all the actors and actresses who played in any of *Star War* movies.
2. List all directors who directed 5 movies or more, in descending order of the number of movies they directed. Return the director's name and the number of movies he/she directed.
3. List all the directors who directed a *Drama* movie in a leap year. (You need to check that the genre is *Drama* and year is divisible by 4.) Return director name, the movie title, and the year.
4. Find the list of actors/actresses that have collaborated with *Steven Spielberg* the most.
5. Find all the actors who acted in films by at least 4 distinct directors (*i.e.* actors who worked with at least 4 distinct directors).
6. For each movie, return the title and the "rating span", that is, the difference between highest and lowest ratings given to that movie. Sort by rating span from highest to lowest, then by movie title.
7. For every pair of male and female actors that appear together in at least two films, find the total number of movies in which they appear together. Sort the answers in decreasing order of the total number of movies.
8. Assuming that actors are unemployed between two consecutive movies, list all actors that were never been unemployed for more than 2 years.
9. Find the difference between the average rating of movies released before 2005 and the average rating of movies released after 2005. (Make sure to calculate the average rating for each movie, then the average of those averages for movies before 2005 and movies after. Don't just calculate the overall average rating before and after 2005.)
10. The Damon number of an actor is the length of the shortest path between the actor and Matt Damon in the "co-acting" graph. That is, Matt Damon has Damon number 0; all actors who acted in the same film as MD have Damon number 1; all actors who acted in the same film as some actor with Damon number 1 have Damon number 2, etc. Return all actors whose Damon number is 2.

Submission Guidelines

1. Your submission of part 1 and part 2 should include one createdb.sql file, one dropdb.sql file, ten .sql files for queries described in part 2 (named q1.sql to q10.sql), and one readme.txt file.

2. **createdb.sql** file should create required types, tables, indexes if required, generate primary keys, constraints, ... , and populate all the provided data based on the skeleton data provided. There is **60 points penalty** if this file is missing since it is not possible for us to check your queries without any data.

3. The **dropdb.sql** file should drop all types and tables that are created by createdb.sql. There is **10 points penalty** if this file is missing from your submission or if it does not drop all of your database objects.

4. **q1.sql ~ q10.sql** query files should contain SQL statements for queries Q1 to Q10 described in part 2 respectively. If you need to write two or more SQLs for ONE step, then they should be written after each other in ONE file.

5. Make sure to properly test created.sql, dropdb.sql and the query files (q1.sql…q10.sql) before submission. There will be **penalty** for resubmission if one the mentioned files do not execute properly.

6. The **readme.txt** file must have your name, the name of the database, tables that your createdb.sql file generates and the execution result of query files (q1.sql…q10.sql). There is **10 points penalty** if this file or some of the required information is missing from your submission.

7. You must make a .zip file to include all of your files in one file (<your_name>_hw2.zip:
   Your zip file should contain **createdb.sql dropdb.sql readme.txt q1.sql q2.sql q3.sql q4.sql q5.sql q6.sql q7.sql q8.sql q9.sql q10.sql** files.

8. You need to submit the 1st and 2nd part of your assignment to Camino.

9. Start working on your assignment early.