CSCI 585 - Database Systems
Fall 2103
Homework Assignment 1: Part b
Due: 10/09/2013 4:59 PM

Section 1 (30 Points)

Map the (E)ER conceptual schema that you have submitted for part a, into a Relational model schema. Thereafter, implement the resulting database schema in the Oracle database. You are free to apply any changes to your submitted (E)ER diagrams, as long as they correspond to the requirements.

Data File:

You are required to populate the database. Use the Microsoft Excel data file provided on the Blackboard along with Part b specifications. You are not allowed to add or delete any records to/from the provided data. However, you could make reasonable assumptions regarding the attributes that are not available in the data file and fill their value by yourself. If there is no data provided for some tables, you do not need to populate those tables.

Important Notes

- You can download the Oracle database *here*.
- **Oracle Database 11g Release 2 is recommended**
- You can download Oracle SQL Developer *here.*
- You could use Oracle *SQL*PLUS* as well.
- You can find Oracle user guide *here*. (Includes installation guide, SQL Developer Guide, SQL Language Guide, etc.)
- There are lots of Oracle tutorial videos available online on the *Youtube*.
- *Oracle Forum*
- Make sure to download and unzip both files to the same directory.

Section 2 (70 Points)

After populating the database, write the following queries in Oracle SQL. You need to determine that what queries need *DISTINCT* function. You are allowed to use all Oracle functions.

Q1) 4 Points

Create a trigger that computes the age of each user (as an integer) and inserts it into the "Age" column of the MEMBER table and extracts the month (as a varchar2) from birthdate column and inserts it into the BIRTHMONTH column. (Before inserting each user).

Q2) 4 Points

Display the average, minimum and the maximum age and the number of users born in the same month. Display the name of months as well. Result should contain 1 row for each month. If there is a month in which no user is born, the corresponding month does not need to be displayed as a part of results. Sort the results, based on the average age descending.

Q3) 4 Points

For each user, display email address, first name, last name and the total number of family members in his/her friend list

Q4) 7 Points

Display the first and last name of mutual friends of users with these emails: angelina@csci585.edu and niki@csci585.edu .

Q5) 5 Points

Display the email address and home town (country, state and city) of each 2 users who are born in the same home town (same country, state and city) and going to participate in an event holding in a city other than their home city. Sort the result based on email address of user1 (ascending) and user2 (ascending) respectively.

Q6) 6 Points

For each user, show the email address, first name, last name and the total number of Going, Not Going and Maybe states that he/she has selected for events. Sort result based on number of "Going" descending, number of "Maybe" descending, and number of "Not Going", respectively.

Q7) 5 Points

Find the average rating (AVGR) of the movie which has been watched more than any other movie (Movie X). Display the email address, first name, last name of the users who have given a higher score than (AVGR) to that movie (Movie X) (display their score as well). Sort the result based on first name (ascending) and last name (ascending), respectively.

Q8) 5 Points

Display the email address, first name, and last name of persons that checked into all places.

Q9) 4 Points

Display email address, fist name and last name of the user who has uploaded the highest number of photos. Display the total number of photos that he/she has uploaded.

Q10) 5 Points

For each user, display the email address, first name, last name, place name(title) and the total number of photos that he/she has taken in that place. Sort the result based on number of the photos (descending), and first name (ascending) and last name (ascending), respectively (assume that the sender of a post is the person who has taken the photos of that post).

Q11) 5 Points

Display the Photo IDs and the place title that have been taken in the top-5 popular places. Sort the results based on the place title ascending. (Note: places with most number of check-ins are the top-5 popular places).

Q12) 5 Points

Display the Post ID with the highest number of comments plus “likes”, in aggregate.
Also, display the number of comments and likes for that post, the email address, first name and last name of its sender as well.

Q13) 7 Points

Display email address, first name and last name of each user and the total number of photos that are visible to him/her. Sort the results based on the number of photos (descending), first name (ascending) and last name (ascending), respectively.
(The number of photos that he/she has taken + the number of photos uploaded in the posts with privacy level = 2 (public post) + the number of photos uploaded in post with privacy level = 1 and taken by his/her friend)

Q14) 4 Points

Write a query to delete all records related to ‘angelina@csci585.edu’ from the database

Submission Guidelines

Please submit your homework through the Blackboard under the Assignments folder, Assignment 1, Part b, before the deadline. You are allowed to submit your homework multiple times, but just the last submitted homework (before the deadline) will be graded.
Your submission, should include one createdb.sql file, one dropdb.sql file, 14 .sql files for queries described in Section 2 (named q1.sql to q14.sql), and one readme.txt file.

- The **createdb.sql** file, should create required tables and triggers, generate primary keys, foreign keys and etc., and populate data based on the provided Excel data file. If your createbd.sql does not insert all tables and their records correctly, you may lose some points since the results that your queries return will be different.

- The **dropdb.sql** file, should drop all tables, triggers and etc. inserted by your createdb.sql file. There are 20 penalty points if this file is missing from your or does not drop everything.

- **q1.sql – q14.sql** query files (14 separate .sql files) should contain SQL statements for queries Q1 to Q14 described in the Section 2 respectively.

- The **readme.txt** file must have your first and last name, USC ID, Blackboard user name and your USC email address, name of the tables and triggers that your createdb.sql file generates. There are 20 penalty points if this file or some of the required information is missing from your submission.

- You need to submit one .zip file which contains all mentioned files. Please name your .zip file as <Your Blackboard ID>_A1-b.zip. For example, if your Blackboard ID is shelmi, the file name would be shelmi_A1-b.zip

You are allowed to use SQL DEVELOPER for generating create and insert statements, but should remove the database name from generated files.
For example if your database name is “John”, delete all “John”. from your generated statements.

Please feel free to post your questions on the Blackboard Discussions.