CSIS350, FALL 2016, PROJECT (DEMO)

You may work alone or in a group of 2. Let me know by noon on Wednesday October 12 (via email) with whom you'll be working (also let me know if you're working alone). Both people will receive the same grade.

You will choose an application area that you find interesting and store its information in a database. You will draw an E/R diagram for the information that will be stored in the database. As a rough guideline, an E/R diagram with 5 or 6 entities is usually sufficiently complicated, so pick your application area accordingly.

Along with the E/R diagram, include a written notation of any integrity constraints your data should satisfy that aren't already covered by the E/R diagram.

You will translate your E/R diagram (and any additional constraints) into a relational schema in Oracle and you must use the Oracle installation on oraserv. You are not to use any object-relational features of Oracle unless you clear it with me first; your database must be strictly relational. Keep the following requirements in mind:

1. The application area can not be CD/DVD/Video/Music collections or a sports team or league. It's a big, diverse, and interesting world -- find something else! Be creative!
2. Pick reasonable domains for your attributes -- pay attention to the size of numeric and character string fields, VARCHAR types, etc.
3. Know the FDs and NFs for each relation. Each relation must be in at least 3NF or you must have a really good explanation why it isn't.
4. You must use at least one CHECK constraint somewhere in your database.
5. You must use at least one TRIGGER somewhere in your database, and it must be something that can't be done without a trigger.
6. You must use at least one view somewhere in your database.
7. Create any secondary indices you think might help the performance of common queries in your DB. You must create at least one secondary index somewhere in your DB and it should be a B Tree index (this is the default in Oracle). Note that all your primary keys will automatically have primary B Tree indices created on them.
8. Put enough data into each of your tables to convince yourselves that they "work": the FK-PK relationships are properly set up, etc. Also ensure you have enough data so that reasonable SQL queries will not return empty results.

Near the end of the semester you (and your partner, if you have one) will meet with me in my office for a 30-minute demonstration of your database. During this demo, I will examine your E/R diagram, logical and physical design, etc., and I will ask you some queries in English that you will type in SQL. You must bring the following to the demo:

1. Your E/R diagram and constraints (2 copies, on paper)
2. A hardcopy of your SQL DDL statements (2 copies, on paper). Along with each "create table" statement should be an indication of the highest NF satisfied by the relation, along with any FDs other than those with a PK on the left side.
3. A hardcopy of your data, either as "insert" statements or the results of "select" queries (2 copies, on paper).
4. Any books, notes, etc. that you wish to bring.

Note that the only grading associated with this project happens at the demo, at which point I grade your E/R diagram, relational schema, the queries I ask you to write, etc. But you should feel free to come see me anytime for help with your application area, E/R diagram, or logical/physical DB design. For the project, the goal is to get you to create a good database, so I tend to act more as a consultant than a professor on this one. Thus you will have the opportunity to have ironed out any problems with your E/R design and relational schemas, etc. before the demo occurs. As a rough guideline, you should try to show me an E/R diagram by early November at

the latest. When you show it to me, I may suggest changes, additions, or deletions to/from your application area. I may also suggest you start from scratch. You don't want to hear this at the demo, so please take my advice and visit me early and often with questions!

The following guidelines apply to demos:

1. Your demo must be completed by 4:30PM Friday December 9, 2016.
2. You must schedule your demo at least 1 week in advance. For example, if you want to do your demo on December 2, you must make an appointment by November 25.
3. Note that certain times tend to get scheduled rather quickly, so if you come to me exactly one week before the due date, all the times on the last day may already be taken, and we (that means mostly you) will have a problem.
4. If your demo occurs before Thanksgiving, you get an 8 point bonus (the demo is graded out of 100 points).
5. If your demo occurs November 28 - December 2, you get a 4 point bonus.

The grade for this project will be based on the E/R diagram (20%), the DDL statements (35%), and the results of the queries you write at the demonstration (45%).

Here are some hints to make your Oracle life easier regarding the project: Use several files with the .sql suffix. In one, put all your create table, etc. statements. In another, put all the drop commands that will completely wipe out your database. In another, put all the insert commands to enter your data. You can then easily and cleanly make changes to your database without using the painful "alter table" command. To see what you've got so far, the "describe " command is very useful. To see a list of your tables and views, type "select * from cat". Other built-in Oracle tables you can access include USER_CATALOG, USER_TABLES, USER_VIEWS, USER_INDEXES, and USER_CONSTRAINTS. Feel free to explore them if you like; some are not very user-friendly, though.

HAVE FUN !!!

Summary of relevant dates:

October 5: Project assigned
October 12: email with partner information due
November 1: by somewhere near this date, I should have seen an E/R diagram
November 22: last day to do demo with 8 point bonus
December 2: last day to do demo with 4 point bonus
December 9: last day for demos (last time slot begins at 4:00PM)