CS3431: Project Description
B-term, 2011
Building a Database Application
Phase 3: Build the DB & SQL Queries

Due Date: Nov. 22, 2011 (8:00 AM).

Description:

In this phase, you will build the actual database in Oracle according to the **Relational model** you developed in Phase 2. You will insert test data and run your SQL queries over the data.

Note:

You may revisit and refine your final design before creating the database. Take into account the comments from the TAs on Phase 1 and Phase 2. Also, you may get my feedback to enhance your design.

1) [20 Points] Step 1 (Build the Database):

Based on your relational model, create an Oracle database for your application. You are required to do the following:

a. Create all tables needed in the database using CREATE TABLE command.

b. Create all constraints that are captured in the relational model either inside CREATE TABLE command, or using ALTER TABLE command.

c. Populate your database by inserting test data in each of the tables. Insert at least 10 records in each table. For this purpose use the INSERT command.

Step 1 Deliverables:

1. Deliver a file *<username>_DDL*.sql, where <username> is the username of any of the team members. The file should include a list of SQL commands to perform steps 1.a, 1.b, and 1.c.
2. The file is a simple text file.
3. Order the commands in the file as 1) the list of CREATE TABLE commands, 2) the list of ALTER TABLE commands (if any), and 3) the list of INSERT commands.
4. Make sure the file is executable. Your TA will run the file using the following command (inside SQL engine):

   `SQL > @<username>_DDL.sql`

   So, make sure your file executes using the command above (assuming the file path is defined correctly) and make sure it creates all the tables and inserts the data.

2) [30 Points] Step 2 (SQL Queries):

Given the queries you proposed in Phase 1, and the relational algebra expressions you provided in Phase 2, write your queries in SQL. You should run the queries and make sure each query returns the desired (correct) answer. You are required to do the following:

a. For each query you proposed in Phase 1, write the corresponding SQL query.
b. For each query, write the query in text (from Phase 1) above the SQL query. This text description should be enclosed between /* */ (to be treated as comment).

Step 2 Deliverables:

1. Deliver a file <*username*>_*Query*.sql, where <username> is the username of any of the team members. The file should include a list of SQL queries.
2. The file is a simple text file.
3. Make sure the file is executable. Your TA will run the file using the following command (inside SQL engine):

   SQL > @<*username*>_*Query*.sql

   So, make sure your file executes using the command above (assuming the file path is defined correctly) and make sure each query runs and produces the correct result.
4. Above the SQL syntax for each query, write the query in text enclosed between /* */. In this case SQL will treat the text as a comment and will execute normally.

3) [0 Points] Step 3 (Enhanced Design):

If you enhanced your design over Phase 2, then you are required to provide a document describing the new design. You should also highlight exactly what did you modify in your design. If you did not change your design, then do not deliver anything for Step 3.

Step 3 Deliverables:

1. Deliver a file <*username*>_*Design*.pdf or <*username*>_*Design*.doc, where <username> is the username of any of the team members.
2. The file should include the new ERD and a list of exact changes that your make over the old design.

Grading:
The maximum grade is 50 Points. Late submissions follow the rules stated on the website.

Deliverables:
Each team should deliver ONE zip or tar file containing the files from Step 1, Step 2, and Step 3 (if applicable).

Submission:
Submit a hardcopy in the beginning of the class (8:00AM), or submit electronically via blackboard.wpi.edu website.