Course: INFO 579: SQL/NoSQL Databases for Data and Information Sciences
Project: 2
Topic: Database Implementation and Querying

Instructions

In this project, you will work first on the implementation of the database you designed in Project 1. You must produce the SQL operations required to create the tables in your design and insert the sample data you provided in Project 1. In the second part of this project, you will have to design well motivated SQL queries to retrieve information from the database.

You must complete the following tasks:

1. Develop the SQL statements to create the tables of your database and insert the sample data. You must present the statements in a single sql script named **database_implementation.sql**.

2. Develop a variety of SQL queries following the requirements for single table queries on the next page. You must present the queries in a single sql script named **single_table.sql**.

3. Develop a variety of SQL queries following the requirements for multiple table queries on the next page. You must present the queries in a single sql script named **multiple_table.sql**.

4. Implement 2 procedures and 1 function or 1 procedure and 2 functions that make use of the data in your database. The 3 routines must be presented in a single sq file named **routines.sql**.

Every statement, query and routine should make sense within the logic of your business plan and must be preceded by a comment explaining its purpose.

Compress all the deliverables into a single zip file. Upload the file to the assignment of project 1 Dropbox in D2L. The name file must follow the format: **project02_groupcode.zip**

Achieving the requirements in each of the 4 tasks provides up to 22.5% of the final score, 90% in total. The remaining 10% can be obtained by including additional queries and/or routines based on their complexity. In task 1, the additional 10% can also be obtained if your original schema contained more than 5 non-associative tables.

NOTE: Late submission will receive at most 70% of the maximum grade.

Requirements for single table queries

1. Write queries to retrieve data from each non-associative table individually.
    a. At least one of the queries must use single row functions.
    b. At least one of the queries must use aggregate functions.
    c. At least one of the queries must sort the results according to some criteria.
    d. At least one of the queries must return just the first N results.
    e. At least one of the queries must use a selection control function.

Requirements for multiple table queries

1. Write a query involving an associative table and two other related tables. You must use the INNER JOIN to connect with all three tables.

2. Write a query including two or more tables and using the LEFT OUTER JOIN.

3. Write a query including some kind of set operation.

4. Write a query including a subquery and some multi-row operation.

5. Write a query including a derived table using the WITH statement.